ExpressBox 3T

User Manual

Thunderbolt™ to PCIe Expansion

Model: EB3T

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Preface

Advisories

Five types of advisories are used throughout this manual to provide helpful information, or to alert you to the potential for hardware damage or personal injury.

NOTE
Used to amplify or explain a comment related to procedural steps or text.

IMPORTANT
Used to indicate an important piece of information or special “tip” to help you

CAUTION
Used to indicate and prevent the following procedure or step from causing damage to the equipment.

WARNING
Used to indicate and prevent the following step from causing injury.

DANGER or STOP
Used to indicate and prevent the following step from causing serious injury or significant data loss

Disclaimer: We have attempted to identify most situations that may pose a danger, warning, or caution condition in this manual. However, Magma does not claim to have covered all situations that might require the use of a Caution, Warning, or Danger indicator.

Safety Instructions

Always use caution when servicing any electrical component. Before handling the Magma Expansion chassis, read the following instructions and safety guidelines to prevent damage to the product and to ensure your own personal safety. Refer to the "Advisories" section for advisory conventions used in this manual, including the distinction between Danger, Warning, Caution, Important, and Note.

- Always use caution when handling/operating the computer. Only qualified, experienced, authorized electronics personnel should access the interior of the computer and expansion chassis per UL and IEC 60950-1
- The power supplies produce high voltages and energy hazards, which can cause bodily harm.
- Use extreme caution when installing or removing components. Refer to the installation instructions in this manual for precautions and procedures. If you have any questions, please contact Magma Technical Support.

WARNING
Never modify or remove the radio frequency interference shielding from your workstation or expansion unit. To do so may cause your installation to produce emissions that could interfere with other electronic equipment in the area of your system.

When Working Inside a Computer

1. Before taking covers off a computer, perform the following steps:
2. Turn off the computer and any peripheral devices.
3. Disconnect the computer and peripheral power cords from their AC outlets or inlets in order to prevent electric shock or system board damage.

In addition, take note of these safety guidelines when appropriate:

- To help avoid possible damage to systems boards, wait five seconds after turning off the computer before removing a component, removing a system board, or disconnecting a peripheral device from the computer.
- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs. If you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before connecting a cable, make sure both connectors are correctly oriented and aligned.

CAUTION
Do not attempt to service the system yourself except as explained in this manual. Follow installation instructions closely.

Protecting Against Electrostatic Discharge

Electrostatic Discharge (ESD) Warning
Electrostatic Discharge (ESD) is the enemy of semiconductor devices. You should always take precautions to eliminate any electrostatic charge from your body and clothing before touching any semiconductor device or card by using an electrostatic wrist strap and/or rubber mat.

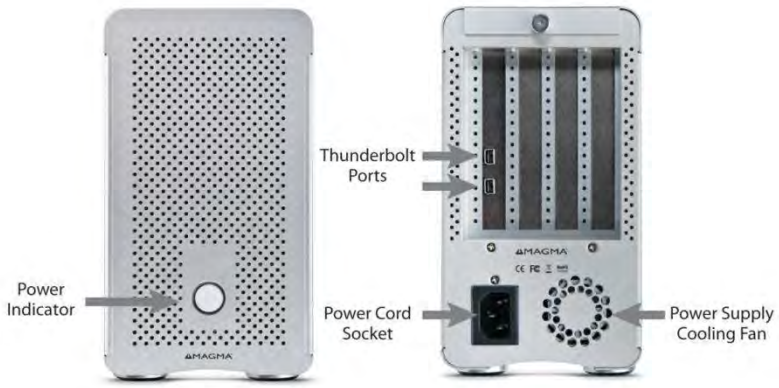
Static electricity can harm system boards. Perform service at an ESD workstation and follow proper ESD procedures to reduce the risk of damage to components. Magma strongly encourages you to follow proper ESD procedures, which can include wrist straps and smocks, when servicing equipment.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component's anti-static packaging material until you are ready to install the component in a computer. Just before unwrapping the anti-static packaging, be sure you are at an ESD workstation or are grounded.
- When transporting a sensitive component, first place it in an anti-static container or packaging.
- Handle all sensitive components at an ESD workstation. If possible, use anti-static floor pads and workbench pads.
- Handle components and boards with care. Don't touch the components or contacts on a board. Hold a board by its edges or by its metal mounting bracket.

Chapter 1 Introduction

ExpressBox 3T provides an 'outside-the-box' solution for using PCIe® cards with Thunderbolt-equipped computers. High-performance work flows are possible by connecting a Thunderbolt equipped computer to a Magma ExpressBox 3T containing PCIe cards such as video capture, media transcoding, audio processing, and fast data storage. And because Thunderbolt is also based on DisplayPort technology, you can daisy chain a high-resolution display with your Magma ExpressBox 3T. Thunderbolt cable is sold separately.



Note: ExpressBox 3T requires a Thunderbolt cable (sold separately)

PCI Express Features

- Supports three full-length cards
- This chassis includes a PCI Express Gen 2 switch. Any two x4 ports, can merge to form an 8-lane port. Therefore, the x8 connector is used twice which allows slot 3 to be 8-lanes or slot 3 to be 4-lanes and slot 4 to be 4-lanes.
- The total PCIe lanes for all 3 slots are 16 lanes. Combinations can be:
    - X8, x8
    - X8, x16 – note: the x16 will run at x8 speed
    - X8, x4, x4
    - X8, x8, x4 – note: the second x8 will only run at x4 speed
    - X8, x16, x4 – note: the x16 will only run at x4 speed

Thunderbolt Features

- High-speed Thunderbolt connection – 10Gbps for **Thunderbolt™ 1.** 20Gbps for **Thunderbolt™ 2**
- Dual channel, with support for PCIe and DisplayPort protocols
- Automatic power-up control by computer
- Daisy-chain or end-point device

Specifications

Item	Description
Technology	PCI Express Bus Specification Revision 2.0 PCI Local Bus Specification Revision 2.3 PCI Bridge Architecture Revision 1.2
Backplane	(3) Full length PCI Express Slots -two x8 PCIe 2.0 -one x4 PCIe 2.0
Thunderbolt™ 1, Interconnect Bandwidth	10Gbps (1.25 GB/s) Bi-directional
Thunderbolt™ 2, Interconnect Bandwidth	20Gbps (2.50 GB/s) Bi-directional
Enclosure	Aluminum Chassis 14.6”W x, 4.3”H x 7.9”H (371mm x 110mm x 200mm)
System Cooling	(1) Hot Swappable Fan (1) Removable Blower Fan
Power Supply Options	250 Watt 100-240 VAC, 50-60 Hz Power Input Two 4-pin auxiliary power tabs
Environmental	Ambient Temperature 0° to 50° C Storage Temperature -20° to 60° C Relative Humidity 5% to 85% non-condensing
MTBF	50,000
Regulatory Compliance	FCC Class A Verified CE RoHS Compliant
Thunderbolt™ 1, Supported Operating Systems	MacOS 10.6.8 or higher
Thunderbolt™ 2, Supported Operating Systems	MacOS 10.9 or higher (not supported 10.8 below)
Warranty	30 day money back guarantee 1 year return to factory

Pre-Installation Information

Before using the Magma Expansion chassis you should perform the following steps:

- Inventory the shipping carton contents for all of the required parts
- Gather all of the necessary tools required for installation
- Read this manual

Parts List

Qty	Item
1	ExpressBox 3T - Three Slot PCIe Expansion Chassis
1	Fan Blower
1	Carry Bag
1	U.S. Standard 115V Power Cord

Tools Required for Installation

To complete the installation of the Magma product you will need a Phillips-head screwdriver and ESD wrist strap to prevent electrostatic discharge.

Electrostatic Discharge (ESD) Warning
All add-in cards are susceptible to electrostatic discharge. When moving cards, it is best to carry the cards in anti-static packaging. If you need to set a circuit card down, be sure to place it inside or on top of an anti-static surface. For more information, see "Protecting Against Electrostatic Discharge" in the Preface.

Chapter 2 Hardware Installation

The following steps will guide you through the installation of your Magma Expansion System.

CAUTION
Before touching anything inside the enclosure, move to an ESD station and follow proper ESD procedures. Failure to do so may result in electrostatic discharge, damaging the computer or its components. For more information, see "Protecting Against Electrostatic Discharge" in the Preface.

Installation-Procedures Overview

Below is the concise version on how to set up the EB3T.

1. Open Enclosure
2. Install PCIe cards (see notes below)
3. Attach Power Cord
4. Connect Thunderbolt cable
5. Start Host computer
6. Hardware Check
7. Verify Installation (via Operating System)

When installing 3rd Party PCIe card, start with one card first just to see if there are any software and hardware issues or incompatibility problems that may occur. This way you can troubleshoot the problem more easily and efficiently. If everything works well and there are no configuration issues, you can proceed with the installation of the remaining 3rd party PCIe cards. Always refer to or read "3rd party manufacturer installation guide" for further instructions.

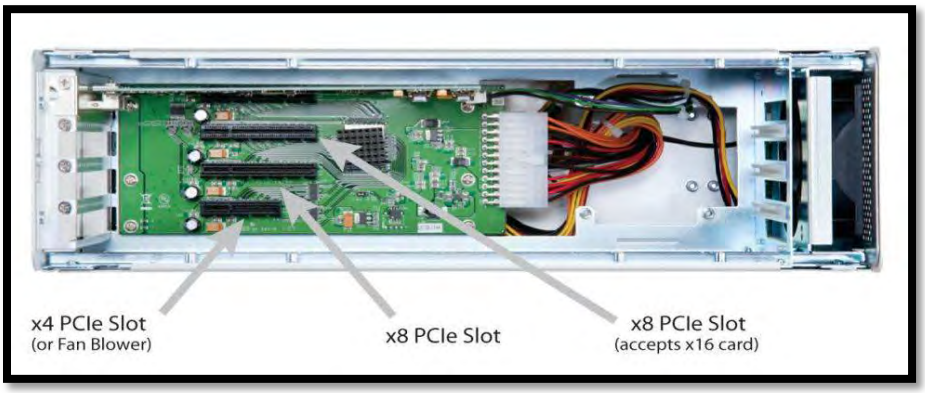
Open Enclosure

Loosen the thumbscrew that retains the top cover of the chassis and slide the lid towards you as shown below:

Install PCIe Cards

Some card manufacturers recommend that you install their software driver prior to installing the card. If this is the case, be sure to install the card driver before connecting ExpressBox 3T to the computer.

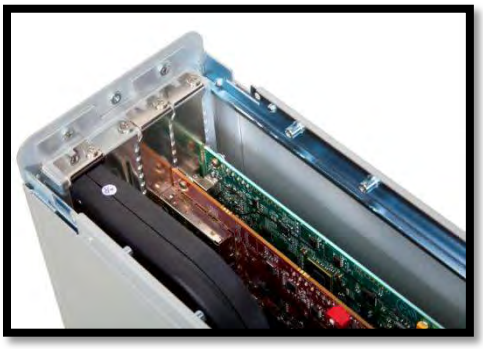
- Slot 1 accepts x1 or x4 PCIe cards or the provided Fan Blower
- Slot 2 accepts x1, x4 or x8 PCIe cards
- Slot 3 accepts all types of PCIe cards x1, x4, x8 or x16 (next to Thunderbolt interface card)



Note: If your PCIe card runs hot or requires more than 20 Watts of power, we recommend use of the provided Fan Blower in the x4 PCIe slot. Use caution if using all three PCIe slots. Check for heat with only two cards first.

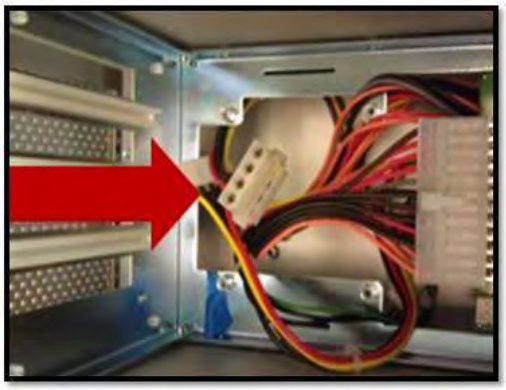
Make sure that all cards are fully seated in their connectors. When correctly seated, there will be a firm resistance when you pull up gently on the card. To keep the cards in place, secure them in the enclosure with their retaining screws.

After securing the cards verify that they do not touch each other.

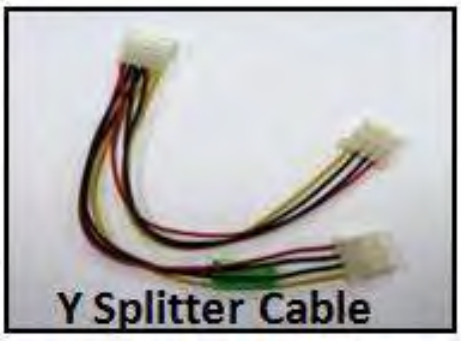


Extra Power

Some PCIe cards require extra power. There are two 4 pin AUX power connectors that can be used for providing extra power to cards. **Older generation of EB3T comes with white 4pin Molex connectors.**



If you need to add another 4 pin AUX tab you can connect an AUX Y splitter



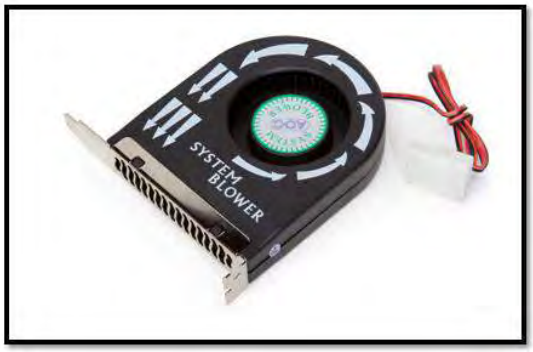
IMPORTANT

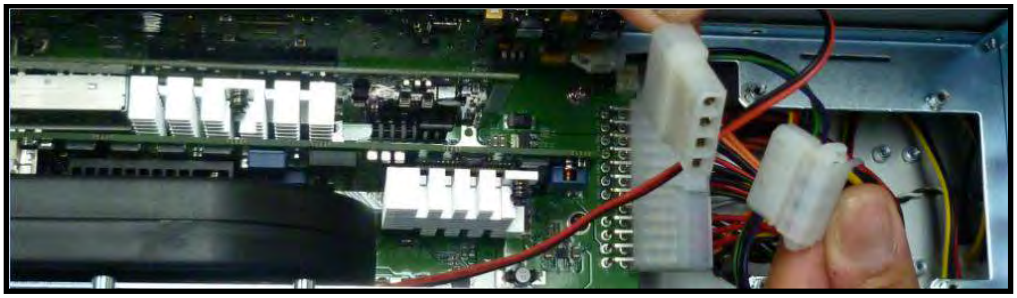
Y cable is only shipped / included with First generation (pre production) of EB3T expansion units that have one Auxiliary Power cable. This is applicable to EB3T Units with **Date Code MG211A111XXXX**.

Second batch of EB3T expansion units with **Date Code MG211A1202** (and above) have already 2 Auxiliary power cables (built-in). These are two 4pin Male Molex connectors. ***NOTE****: The Y Splitter is no longer included with these units*.

Add-in System Blower

If the PCIe cards run hot or are over 20 watts of power, Magma recommends installing the blower in the x4 Slot of ExpressBox 3T. Use caution if loading three cards at once. Check for heat with two cards first.



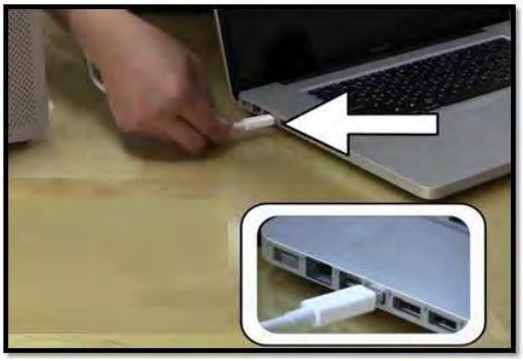


CAUTION
Before touching anything inside the enclosure, be sure unit has been off and is cool. Beware of touching anything in chassis if unit has been on.

Attach Power Cord

Connect Thunderbolt Cables

Attach Thunderbolt cable into either top or bottom port on the ExpressBox 3T. Plug in Display Monitor, DVI/HDMI, or Display. If no display will be used, you can daisy chain other Thunderbolt devices. Plug in the other end of the Thunderbolt cable to the Thunderbolt port on the computer.



Start Host Computer

ExpressBox 3T will automatically turn ON when the computer is turned ON. A BLUE light will shine when the expansion chassis is ON. ExpressBox 3T will automatically turn OFF when the computer is turned OFF or goes into SLEEP mode.

If either end of the Thunderbolt cable is removed while the system is ON, the expansion chassis will automatically power down.

The Blue light on the front of ExpressBox 3T is not an on off push button, it simply indicates whether the chassis is on or off. If either end of the Thunderbolt cable is disconnected, ExpressBox 3T will automatically turn off.

Chapter 3 Verify Installation

Hardware

Check the status of the LEDs on the Interface cards and backplane to verify good connection or link between your host computer and expansion unit.

1. Thunderbolt™ 1 interface card : 5 solid green LEDS are illuminated and three solid green LEDs on the backplane. For more details see "**Thunderbolt™ 1 Interface Card LEDs**" below.

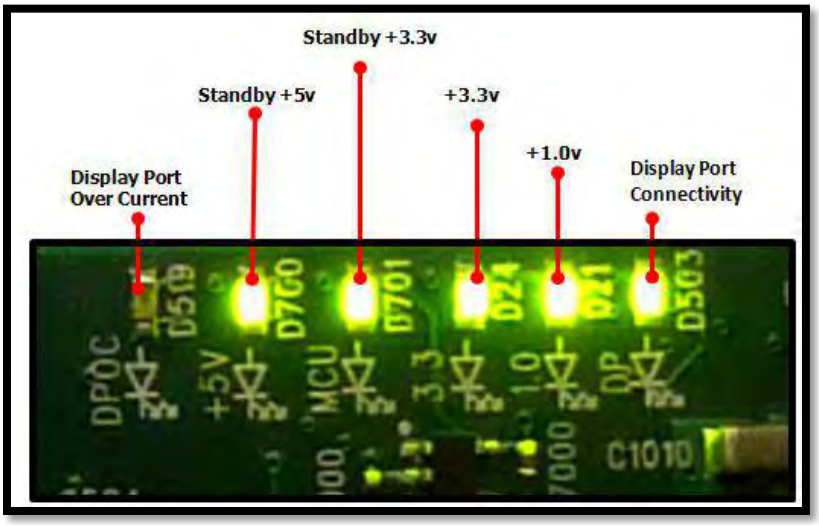
2. Thunderbolt™ 2 Interface Card: 7 solid green LEDs are illuminated and 3 solid green LEDs on the backplane. For more details go to "**Thunderbolt™ 2 Interface Card LEDs on page 20**".

Thunderbolt™ 1 Interface Card & LEDs

When the Thunderbolt™ 1 Interface card is fully operational and with an external Display device attached, 5 green LEDs are illuminated (solid green), see **FIGURE T1-A** .

IMPORTANT
If you are only seeing Two Green LEDs that are illuminated on the Thunderbolt Interface card after the Magma Roben-3 is turned on, this indicates that there a hardware failure within your expansion unit. Check your Thunderbolt cable, make sure it is connected firmly and the Thunderbolt Interface card is seated in the PCIE slot properly.

FIGURE T1-A



LED	Description
Display Port Over Current	comes on when there is a power problem on the interface card
+5v Standby & +3.3v standby	are illuminated when the power cord is attached to expansion unit
+3.3v and 1.0v	are illuminated when the expansion chassis turns on
Display Port Connectivity	comes on when an external display is attached to Thunderbolt port of the expansion unit

IMPORTANT
If there is no Display Monitor attached to Thunderbolt™ 1 Interface card it would only show 4 illuminated solid GREEN LEDs, this is normal.
See picture below.

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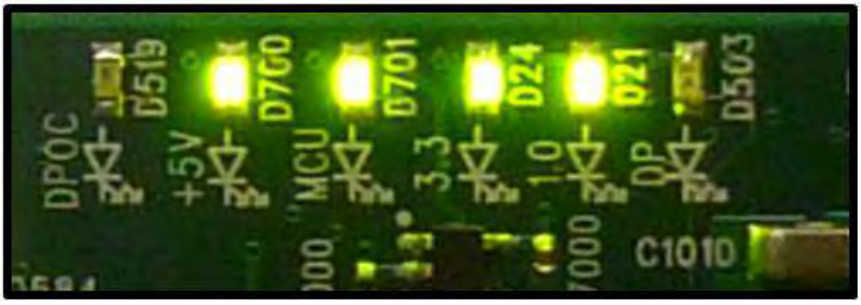
FIGURE T1-B



IMPORTANT
LEDs D700 and D701 on the Thunderbolt™ 1 Interface card are illuminated when power cord is attached to expansion unit. This means the expansion unit is on standby-mode.
See picture below.

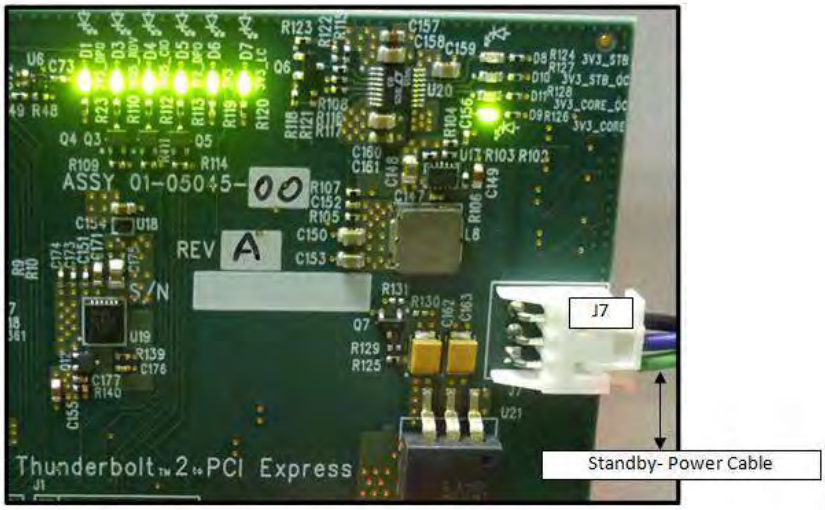
FIGURE T1-C

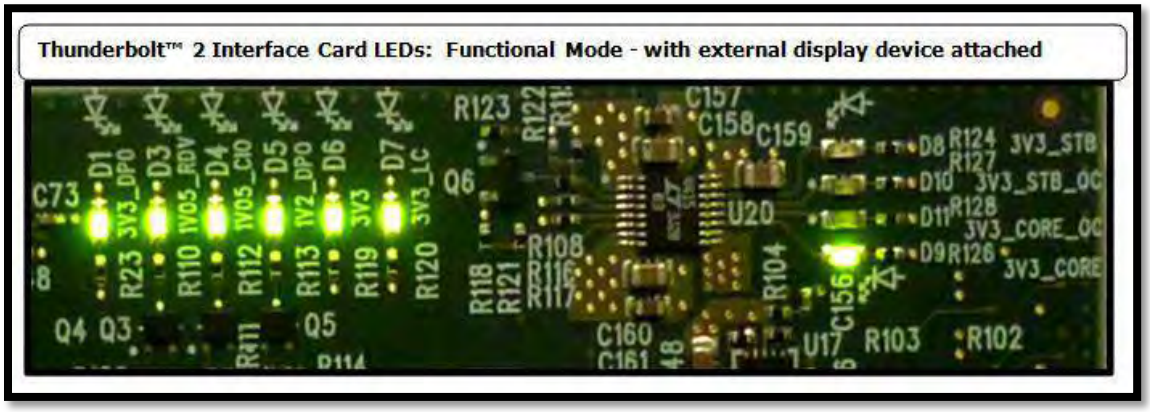
Thunderbolt™ 2 Interface Card & LEDs

There are 10 LEDs on the Thunderbolt™ 2 Interface card. These LEDs are essential in checking the power status of the board. It also serves as functional and failure indicators and helps in troubleshooting hardware problems.

When the Thunderbolt™ 2 Interface card is fully operational and with an external Display device attached , 7 solid Green LEDs (D1,D3,D4,D5,D6,D7 and D9) are illuminated. See picture on **FIGURE T2-A** .

FIGURE T2-A



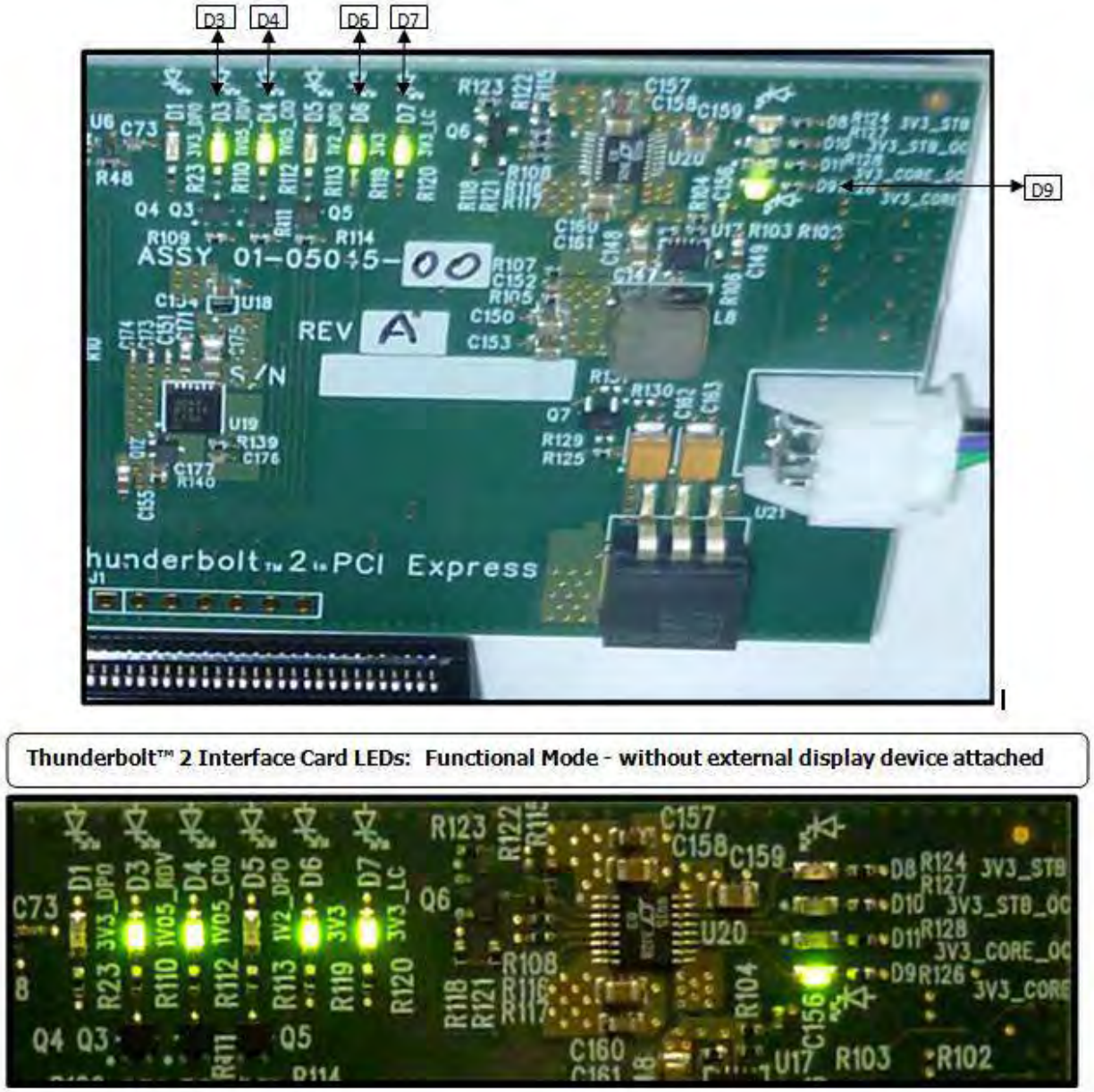


If the above LEDs are not coming ON, it is an indication that your board is not getting power or the board is faulty or defective. Please check the Standby-power cable is firmly connected to Thunderbolt™ 2 Interface card power connector (J7). Make sure the Thunderbolt™ 2 Interface card is seated all the way in the PCIe slot. Try reseating the card in the PCIE slot.

If you reconnected an external Display device, LEDs D1 and D5 should come on immediately. Otherwise, the Thunderbolt™ 2 Interface card is not properly working or the monitor Display port cable is faulty.

If there is no Display Monitor attached to Thunderbolt™ 2 Interface card it would only show 5 illuminated solid GREEN LEDs (D3, D4,D6,D7 and D9), this is normal. See FIGURE T2-B below.

FIGURE T2-B

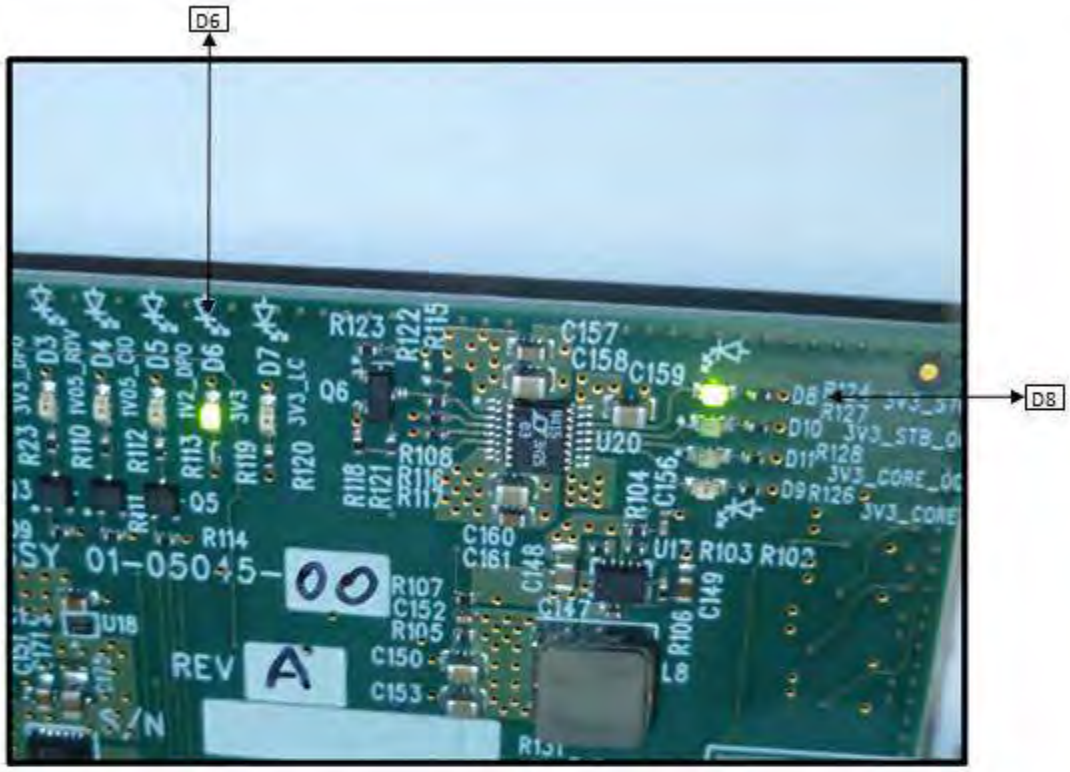


Thunderbolt™ 2 Interface Card LEDs: Functional Mode - without external display device attached

D9

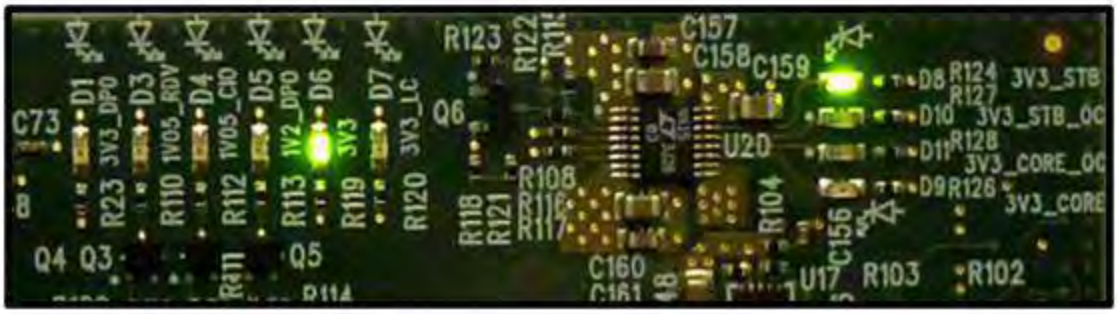
LEDs D6 and D8 are illuminated when power cord is attached to expansion unit. This means the expansion unit is on standby-mode. See picture below.

FIGURE T2-C



If the above LEDs are not coming ON, please check the power standby cable make sure it is firmly connected to Thunderbolt Interface card power connector (J7). See page 25.

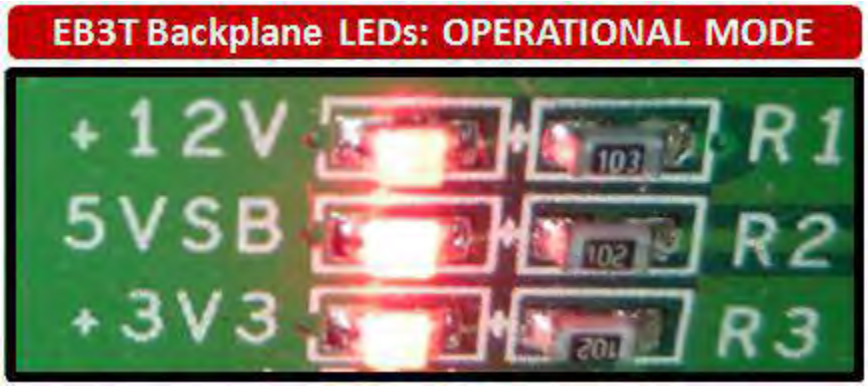
Thunderbolt™ 2 Interface Card LEDs: Standby-Mode



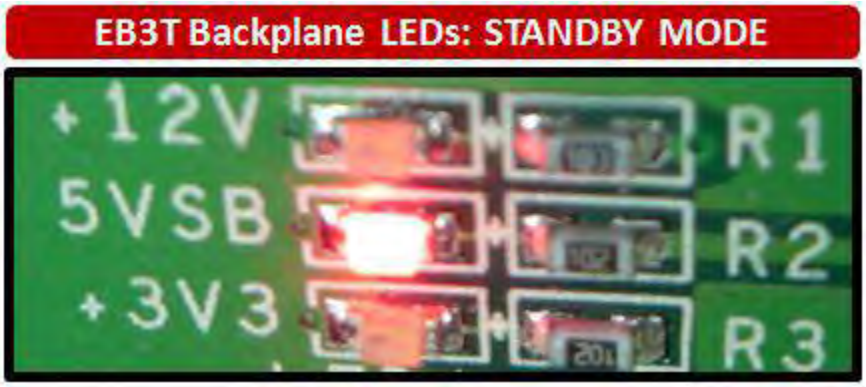
NOTE: If the above LEDs are not coming ON, please check the power standby cable make sure it is firmly connected to Thunderbolt Interface card power connector (J7). See page 25.

Backplane & LEDs

A functional / operational backplane will illuminate three **solid RED LEDs**. See picture below.



One solid green LED on the backplane signifies **"standby mode"**. The magma device is" switched off" on the electronic interface (but it draws some power) on standby mode. It is waiting to be activated by a remote power or remote controller. See picture below.



IMPORTANT
If the above three RED LEDs are not coming ON, you may be having a faulty power supply unit or defective backplane.
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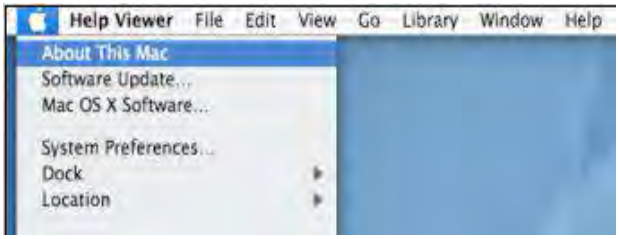
Software

How to check Magma device - Mac OS X

IMPORTANT
Magma requires no driver in Apple Mac Operating System.

To verify a successful installation of Magma Roben-3 on Mac select “About This Mac” under the Apple Icon.



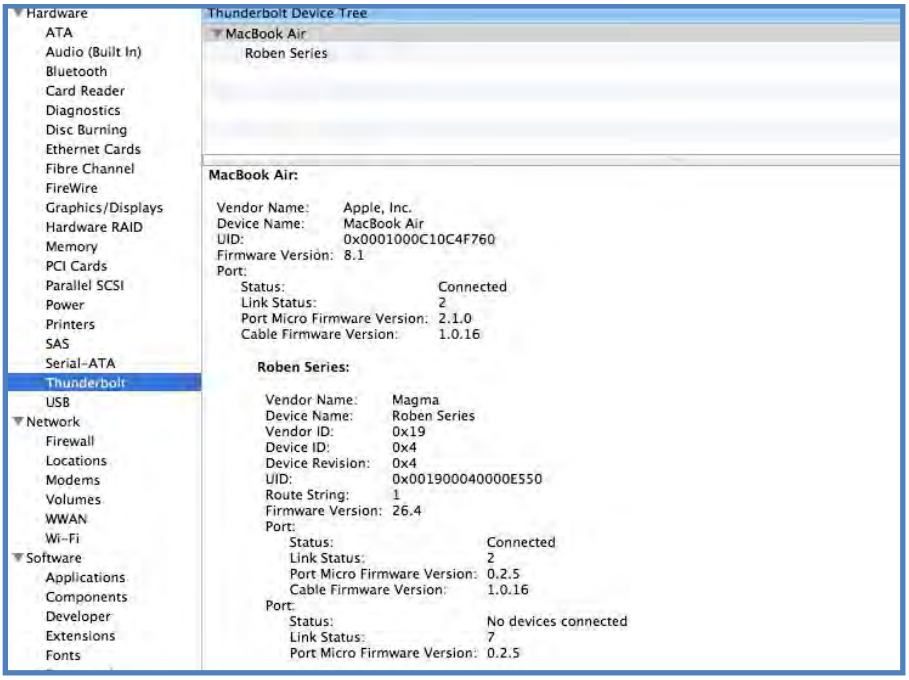
1. Your first step will vary depending on which version of Mac OS X you are using:

Mac OS X 10.6.8 Snow Leopard or earlier:

- Open Apple System Profiler by choosing About this Mac from the Apple ( ) menu. Then, click More Info.

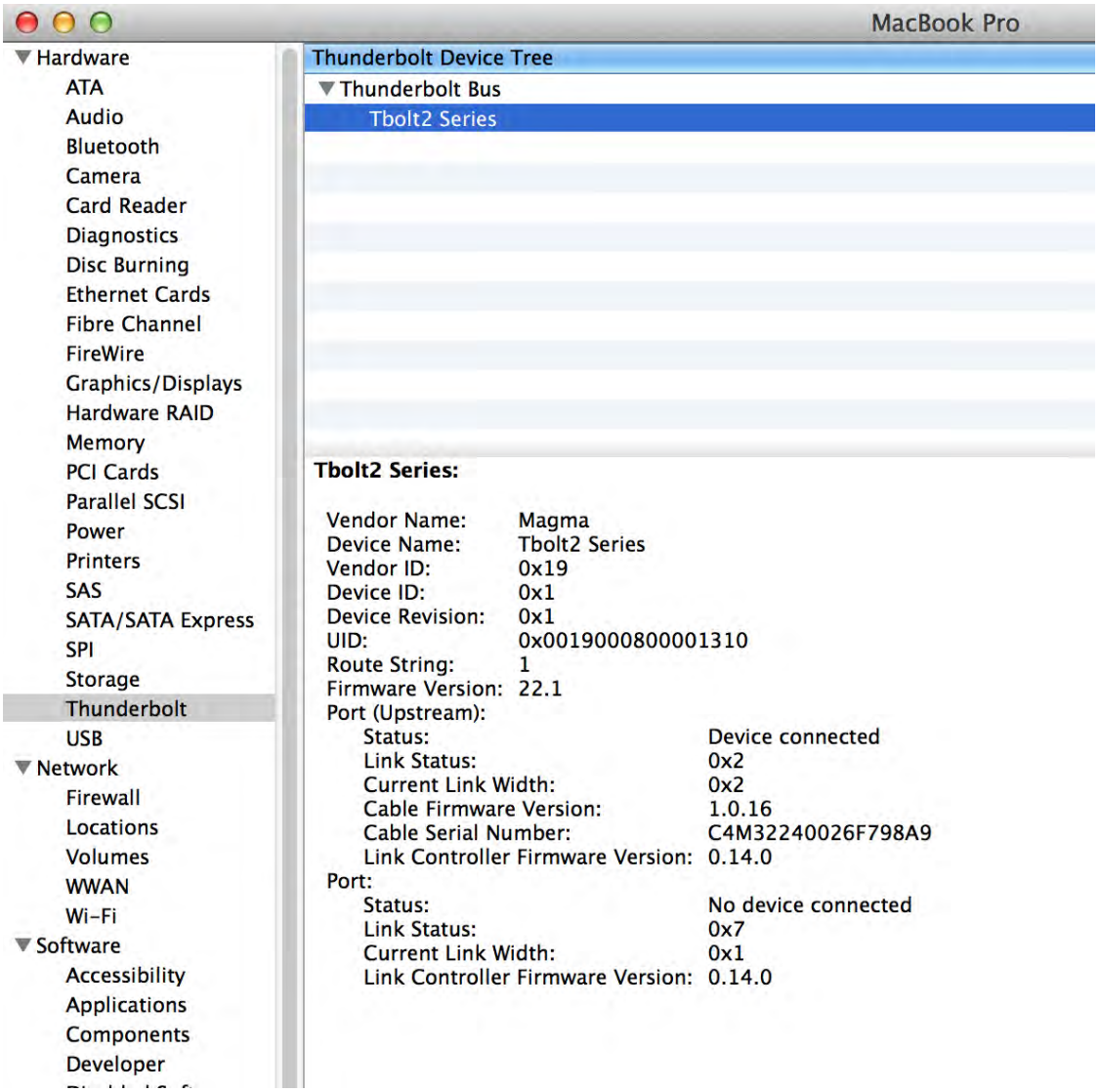
OS X Lion 10.7 or later:

- Open System Information by choosing About this Mac from the Apple ( ) menu. Then, click System Report
2. Click Thunderbolt. This picture below applies to **Thunderbolt™ 1** device.



The picture below applies for **Thunderbolt™ 2**. "Tbolt2 Series" is the new device name for Thunderbolt™ 2.

IMPORTANT
Thunderbolt™ 2 requires Mac OS 10.9 and above. It is highly recommend to update your Mac to the latest Operating system before using the Thunderbolt™ 2 hardware.



How to Check Magma Device - Windows 7 and 8

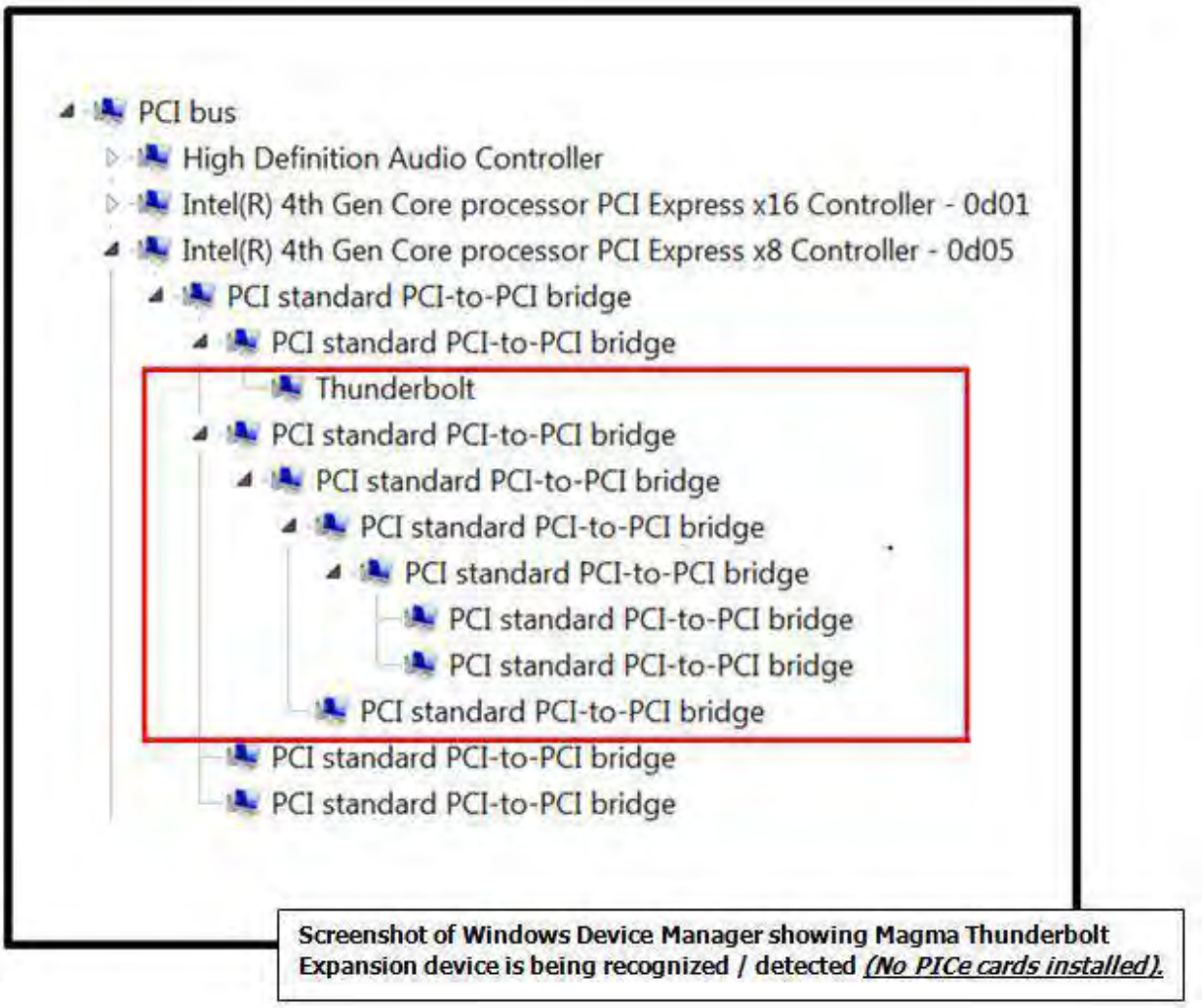
Open ACPI (BIOS) → Open PCI Bus→Click the '+' sign several times until your reach a PCI Express Root Port with a PCI Standard PCI-to-PCI Bridge beneath it.

If the verification is successful, you can install 3rd Party cards as well as auxiliary peripherals, such as hard drives into the chassis.

If, however, the installation was unsuccessful, you may not see the PCI to PCI Bridge, or it will have a small yellow symbol in front of it as shown below.

IMPORTANT
Magma requires no driver in Windows Operating System, Unix OS, Linux and other flavor of Operating Systems.

This applies to **Thunderbolt™ 2** and **Thunderbolt™ 1**


PCI bus
High Definition Audio Controller
Intel(R) 4th Gen Core processor PCI Express x16 Controller - 0d01
Intel(R) 4th Gen Core processor PCI Express x8 Controller - 0d05
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
Thunderbolt
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
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PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge

Screenshot of Windows Device Manager showing Magma Thunderbolt Expansion device is being recognized / detected *(No PICe cards installed).*

How To Check PCIe cards - Mac OS X

IMPORTANT
For Mac OS, a driver modification is required from the PCIe card provider. A Mac OS driver that is "Thunderbolt Aware" is required so the PCIe hardware will be recognized by Mac OS through Thunderbolt™ Technology

1. Your first step will vary depending on which version of Mac OS X you are using:

Mac OS X 10.6.8 Snow Leopard or earlier:

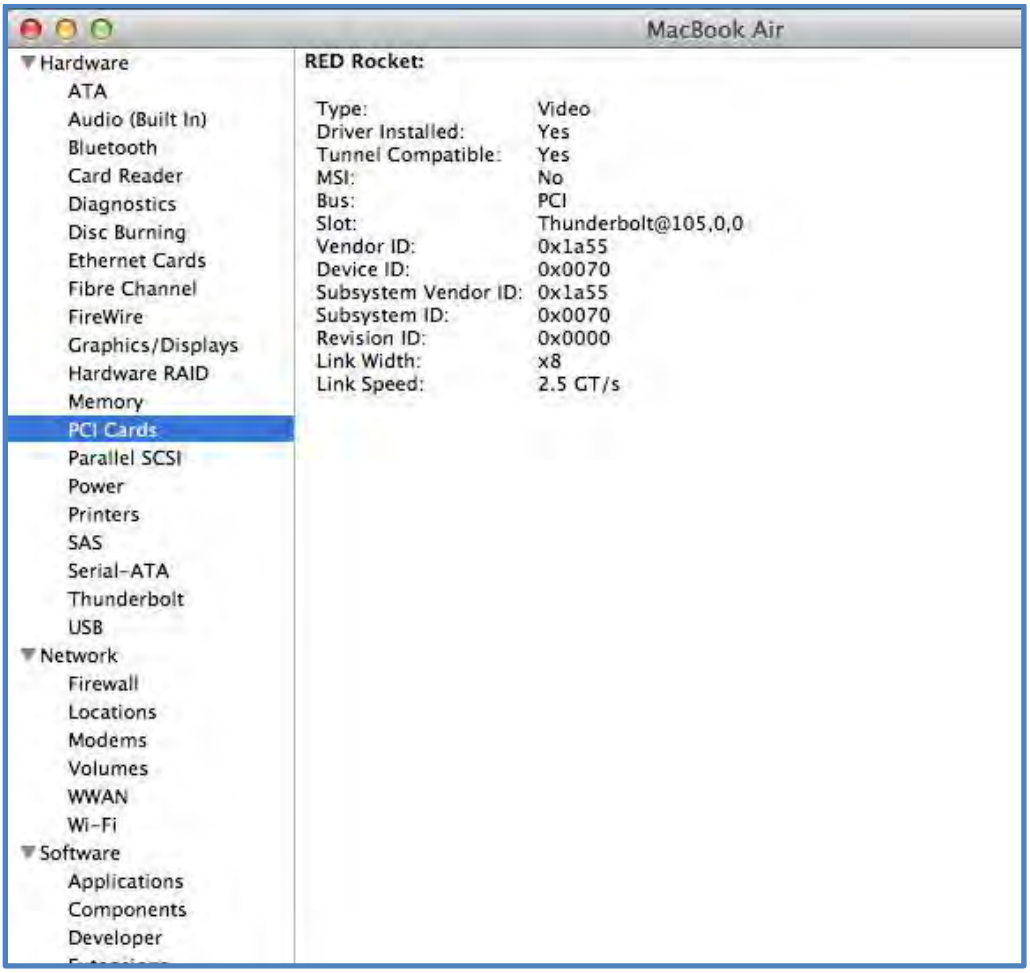
- Open Apple System Profiler by choosing About this Mac from the Apple ( ) menu. Then, click More Info.

OS X Lion 10.7 or later:

- Open System Information by choosing About this Mac from the Apple ( ) menu. Then, click System Report

2. Click PCI cards

This applies to Thunderbolt™ 2 and Thunderbolt™ 1.



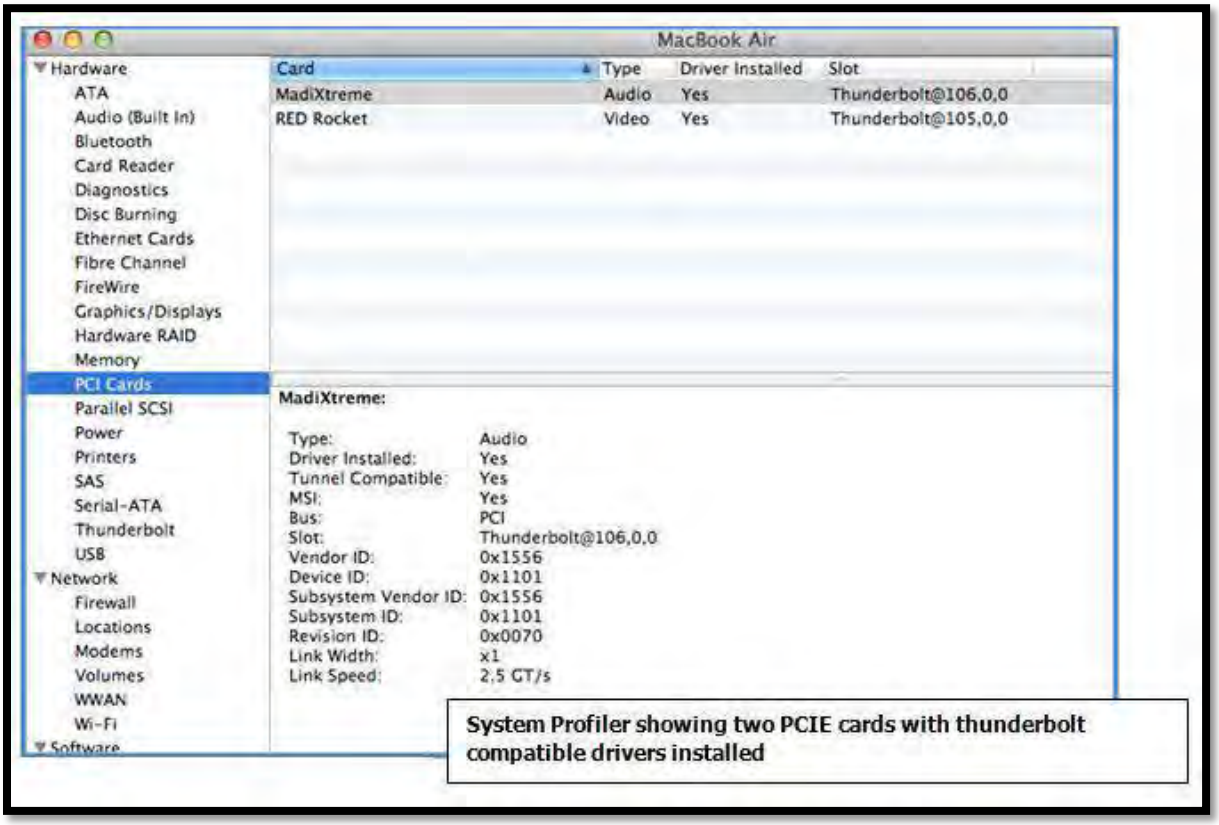
Thunderbolt Aware Driver is required for PCIe cards

For Mac OS, a Thunderbolt Aware (Compatible) driver is required because it allows PCIe cards to be detected in Roben-3. Ensure you have a "Thunderbolt Aware or Thunderbolt Compatible" driver from the PCIe card manufacturer otherwise the PCIe card will not be functional.

If the driver is installed, make sure it supports Thunderbolt. If the driver does not support Thunderbolt you will see a message "Driver Installed: No

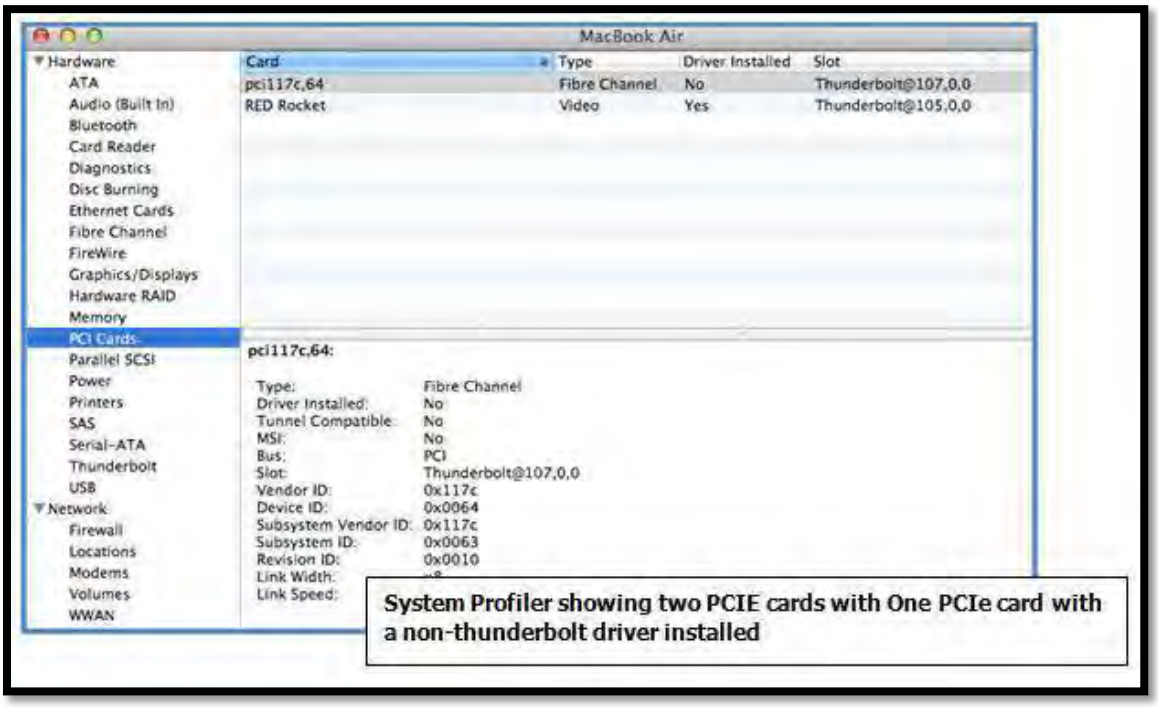
Click on the specific PCIe card in question to see if it's Thunderbolt Compatible. If it shows "Yes" then it's compatible, if it shows "No", the PCIe card will not be visible in Roben-3.

Two PCIe cards with drivers installed

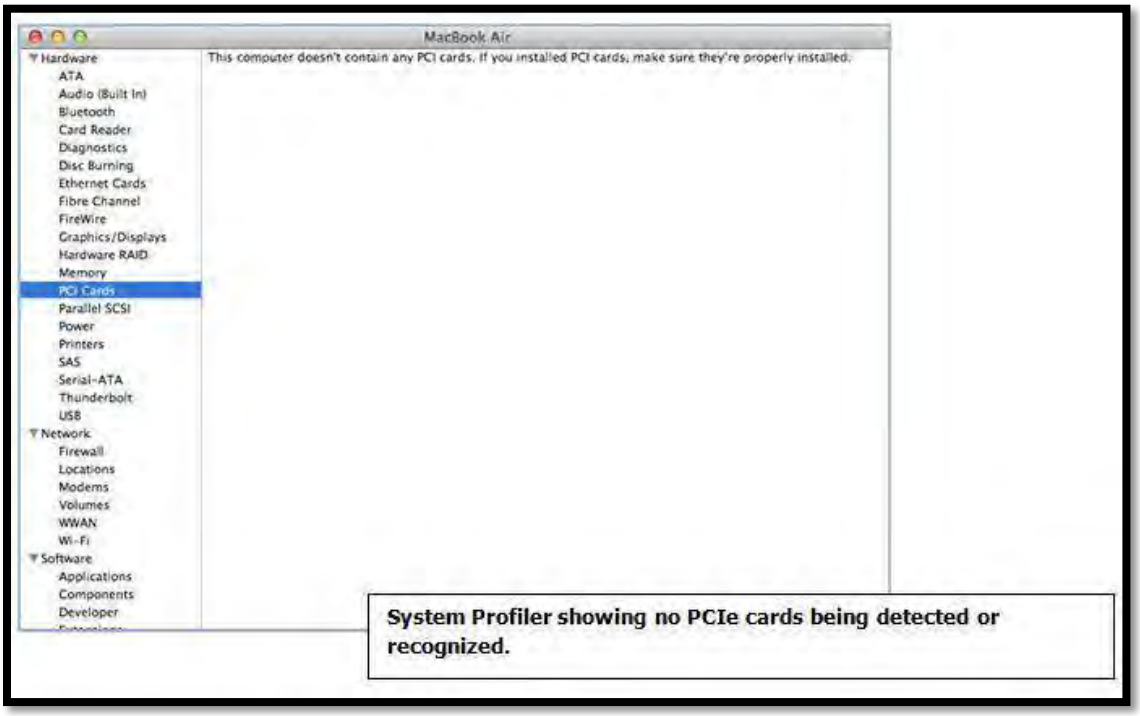


NOTE
Magma does not provide nor supply any third party PCIe drivers. If you need driver you must contact the vendor or manufacturer of the PCIE card. If you would like to determine whether the 3rd party PCIE card has a Thunderbolt Compatible driver or not you must also contact the vendor or manufacturer of the PCIe card.

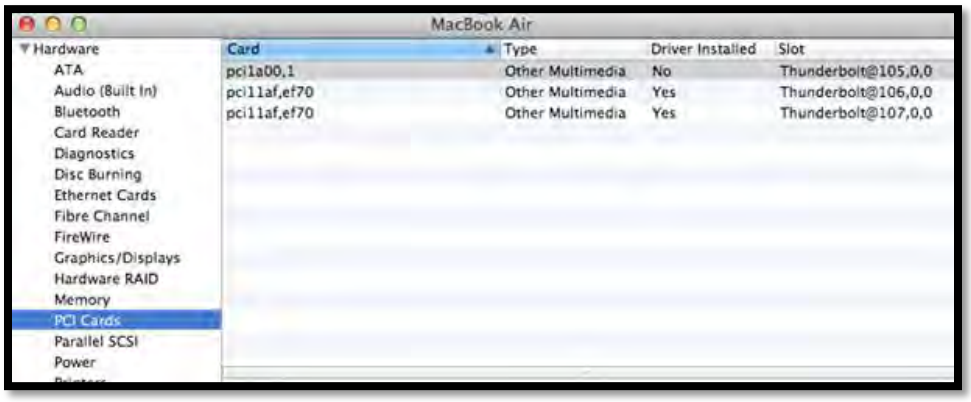
Two PCIe cards with 1 card with no driver installed



No PCIe cards detected or recognized



Two PCIe cards with drivers installed, 1 card with no driver



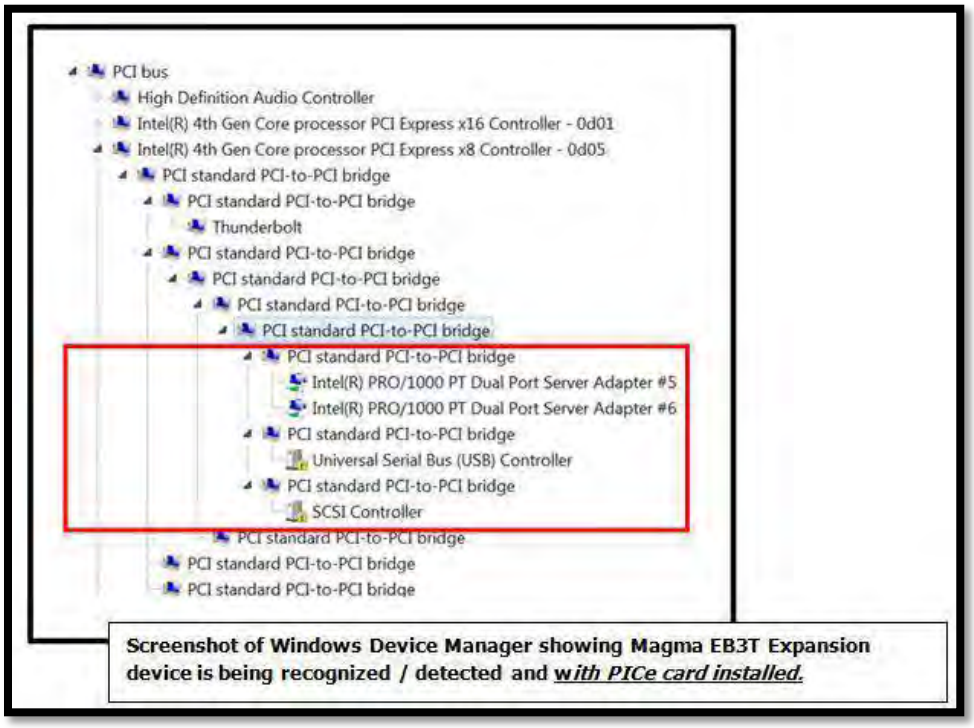
How to Check PCIe cards – Windows 7 and 8

Open ACPI (BIOS) → Open PCI Bus→Click the '+' sign several times until your reach a PCI Express Root Port with a PCI Standard PCI-to-PCI Bridge beneath it.

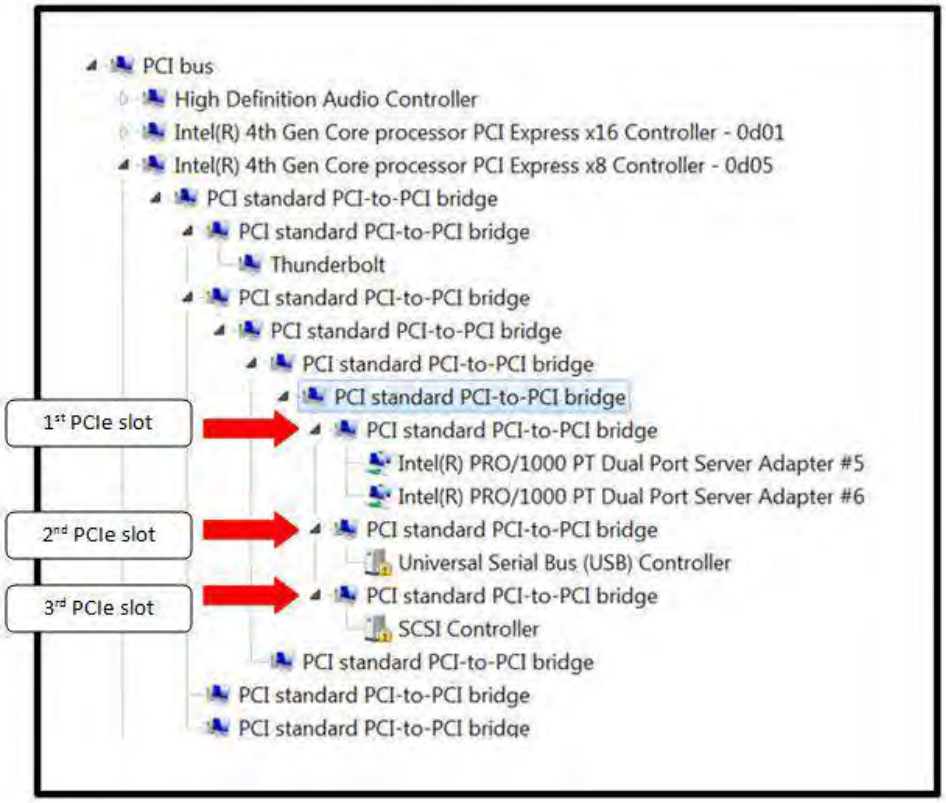
If the verification is successful, you can install 3rd Party cards as well as auxiliary peripherals, such as hard drives into the chassis.

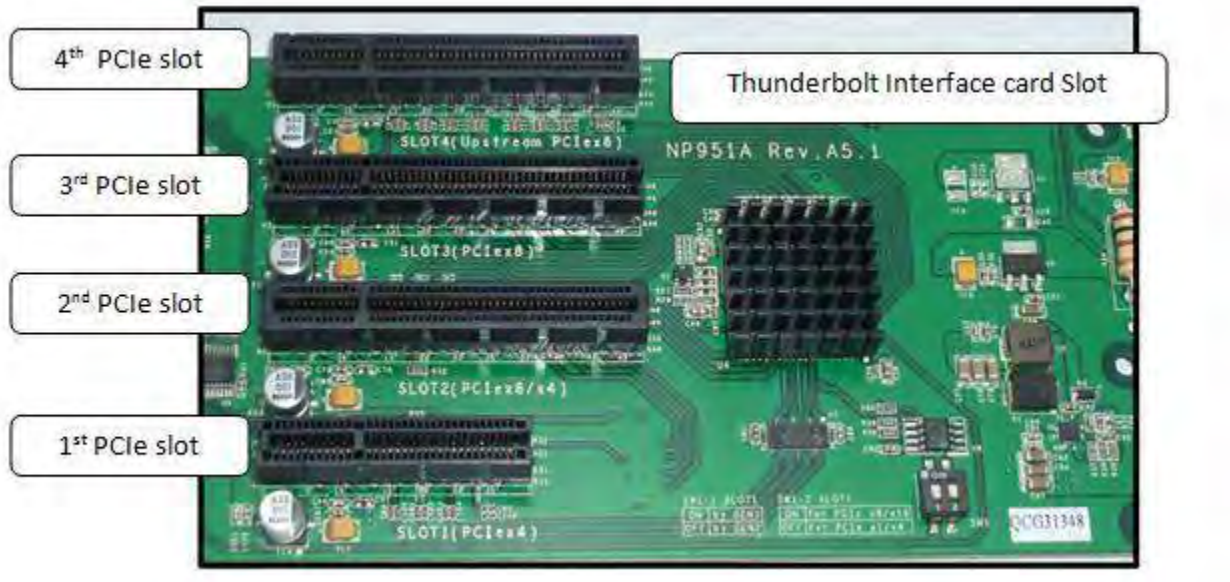
If, however, the installation was unsuccessful, you may not see the PCI to PCI Bridge, or it will have a small yellow symbol in front of it as shown below.

This applies to Thunderbolt™ 2 and Thunderbolt™ 1 expansion units.


PCI bus
High Definition Audio Controller
Intel(R) 4th Gen Core processor PCI Express x16 Controller - 0d01
Intel(R) 4th Gen Core processor PCI Express x8 Controller - 0d05
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
Thunderbolt
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
Intel(R) PRO/1000 PT Dual Port Server Adapter #5
Intel(R) PRO/1000 PT Dual Port Server Adapter #6
PCI standard PCI-to-PCI bridge
Universal Serial Bus (USB) Controller
PCI standard PCI-to-PCI bridge
SCSI Controller
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge

Screenshot of Windows Device Manager showing Magma EB3T Expansion device is being recognized / detected and *with PICe card installed.*


PCI bus
High Definition Audio Controller
Intel(R) 4th Gen Core processor PCI Express x16 Controller - 0d01
Intel(R) 4th Gen Core processor PCI Express x8 Controller - 0d05
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
Thunderbolt
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
1st PCIe slot
PCI standard PCI-to-PCI bridge
Intel(R) PRO/1000 PT Dual Port Server Adapter #5
Intel(R) PRO/1000 PT Dual Port Server Adapter #6
2nd PCIe slot
PCI standard PCI-to-PCI bridge
Universal Serial Bus (USB) Controller
3rd PCIe slot
PCI standard PCI-to-PCI bridge
SCSI Controller
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge


4th PCIe slot
Thunderbolt Interface card Slot
3rd PCIe slot
2nd PCIe slot
1st PCIe slot
NP951A Rev.A5.1
SLOT4(Upstream PCIex8)
SLOT3(PCIex8)
SLOT2(PCIex8/x4)
SLOT1(PCIex4)

Chapter 4 Technical Information

Fan Speed and Noise Adjustment

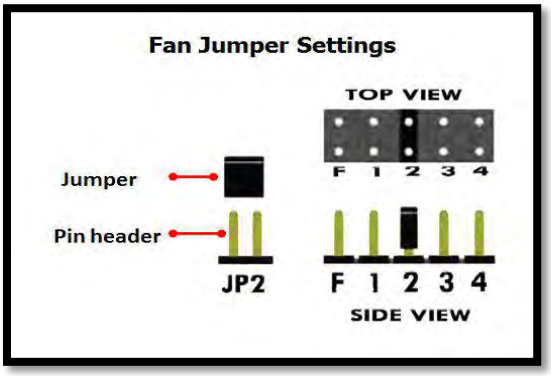
For low power or self-cooled cards you can reduce the fan noise by moving the jumper found under the removable cooling fan at the front of the chassis to the slowest speed setting. If the chassis gets hot during use, you should increase the fan speed to provide more cooling.

You will need a pair of needle nose pliers or a similar tool used for grabbing small jumpers. Remove the fan cage at the front of the chassis and you will see a small board as shown below.

The Factory Default is setting 2 (medium). The slowest speed is setting 4 and the fastest speed is setting F.

F = fastest	1 = fast	2 = medium (default)	3 = slow	4 = slowest

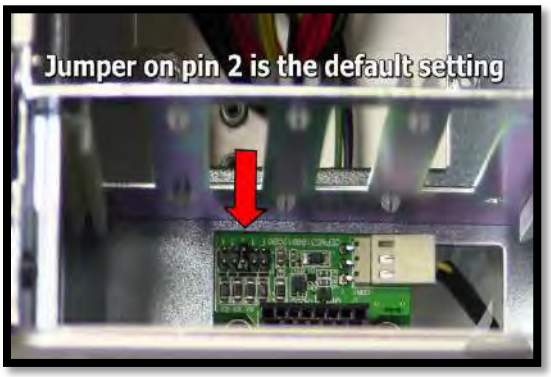
- The factory "Default" setting is 2(medium).
- The slowest speed setting is 4 and the fastest speed setting is F

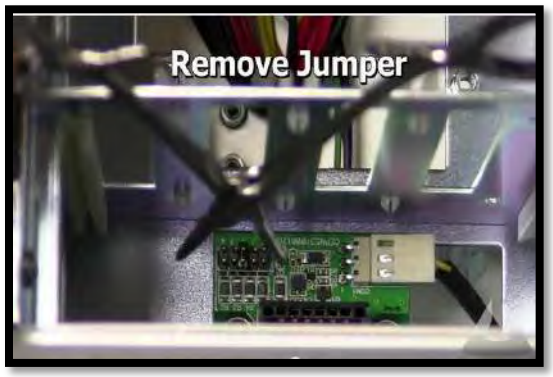


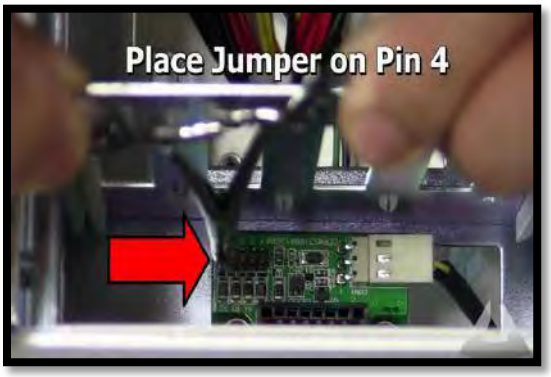
Older EB3T unit – Fan Controller

Below are steps on how to access the Fan controller on older EB3T units (first generation EB3T model).

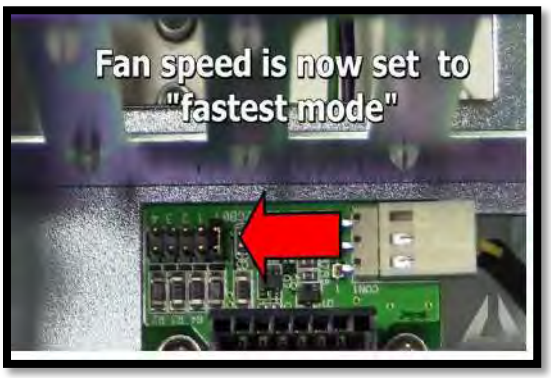
Setting the Fan to slowest speed mode



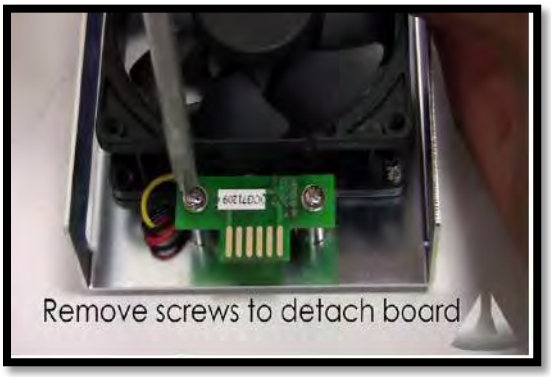


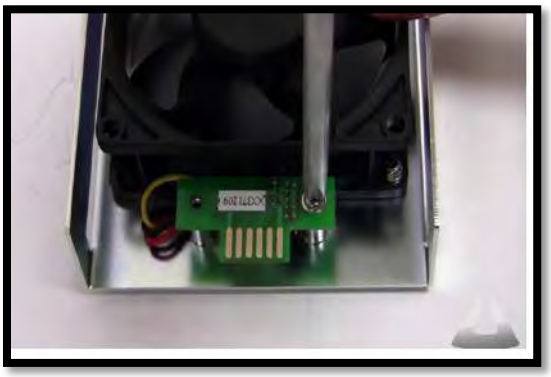


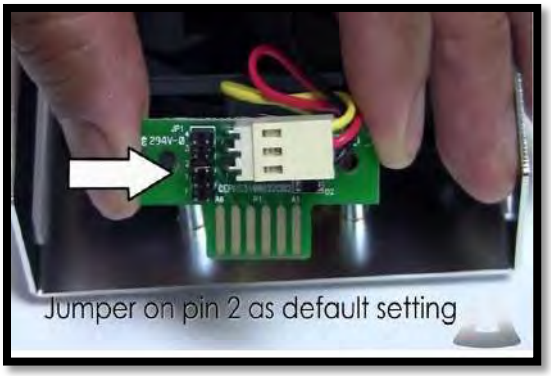
Setting the Fan to fastest speed mode



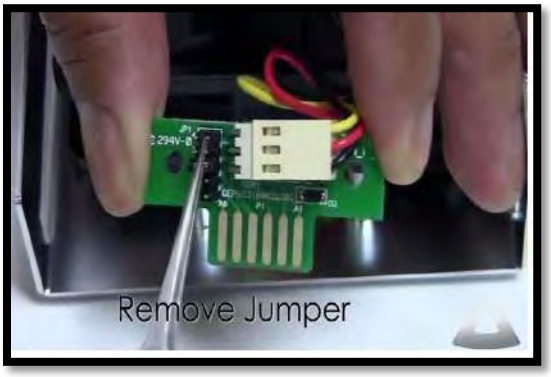
New EB3T unit – Fan Controller

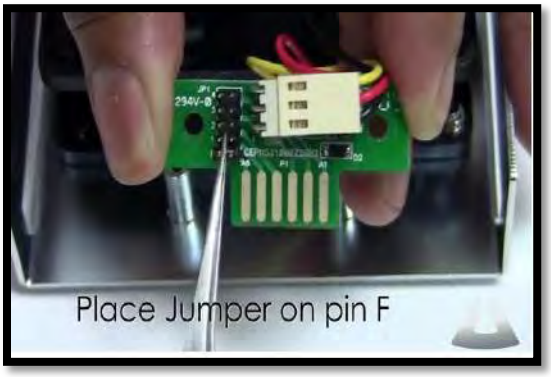




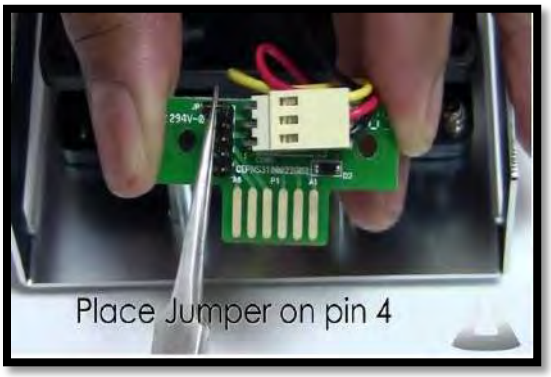


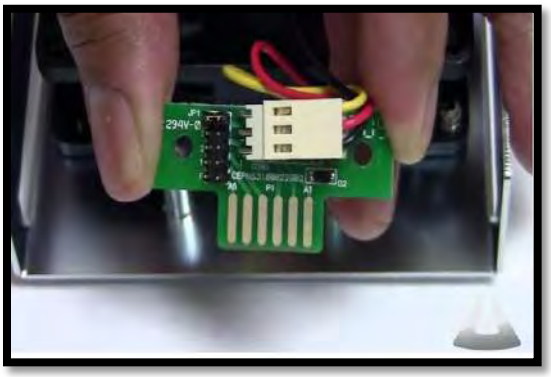
Setting the Fan to fast speed mode



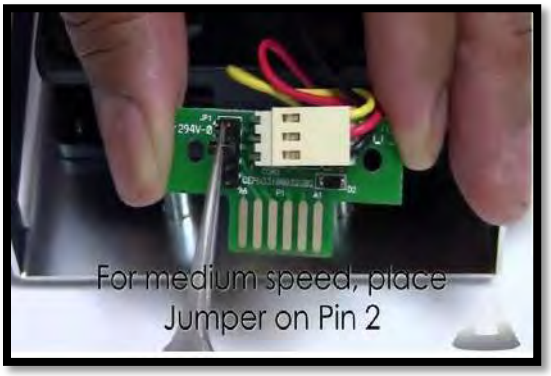


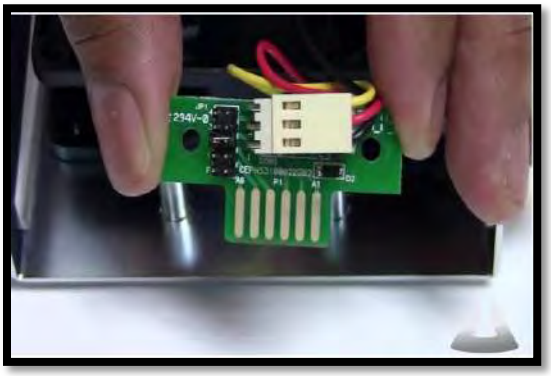
Setting the Fan to slowest speed mode





Setting the Fan to medium speed mode

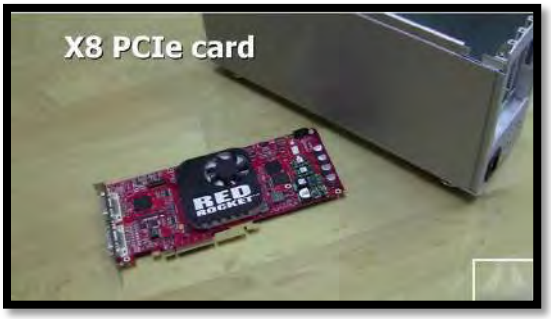




How to Install PCIe cards

Installation of three PCIe cards.

Two x8 cards and one x4 card

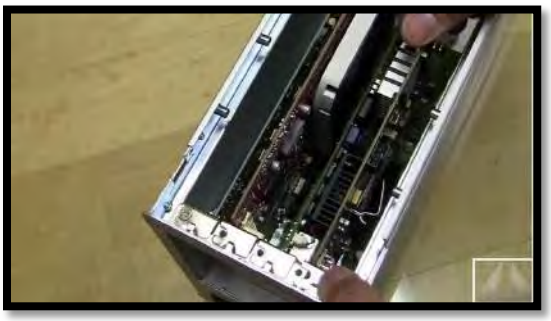


Install 1st PCIe card

Install 2nd PCIe card

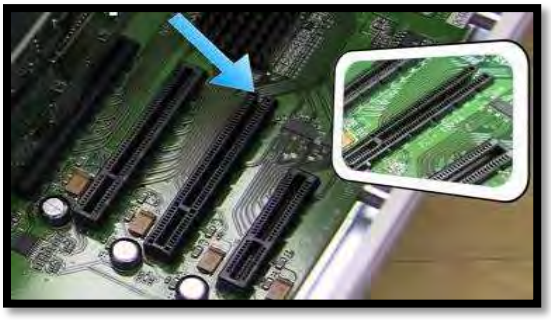
Install 3rd PCIe card

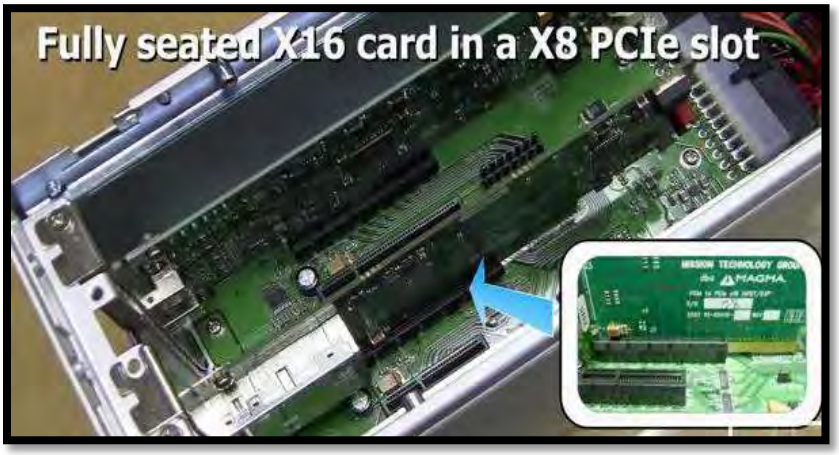
Secure all the cards



How to Install x16 PCIe card

Use the 2nd PCIe slot when installing a x16 card. The 2nd PCIe slot has an open-notch on the far end of the connector.





Pro Tools HDx cards Installation

Prior to installing the Hdx cards you need a PCIe AUX power adapter cable. Avid supplies the required auxiliary power adapter cable. If you don't have the AUX power adapter cable you need to contact AVID to avail one.

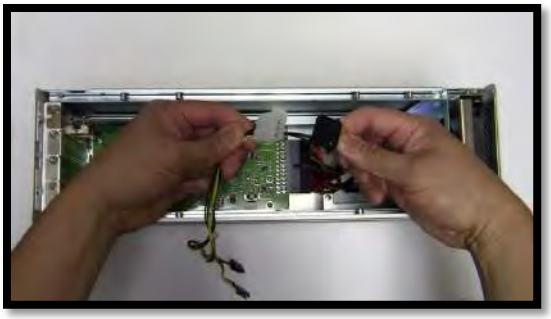
There are two types of HDx auxiliary power adapter cables provided by AVID and both of these cables are included with ProTools HDx cards.

- One is for Mac installation
- and the other is for PC installation.

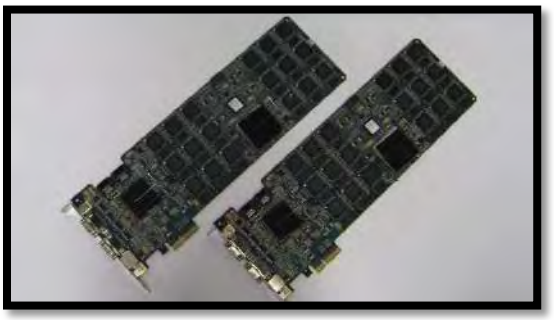
You need the AUX power adapter cable for PC installation as shown from the picture on the right.

Pull out the Aux power cable inside the EB3T

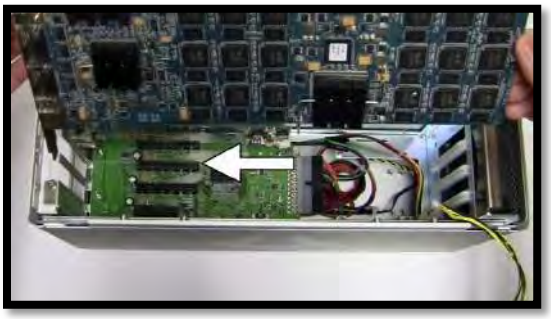
Connect the HDx power cable to the EB3T Aux power cable



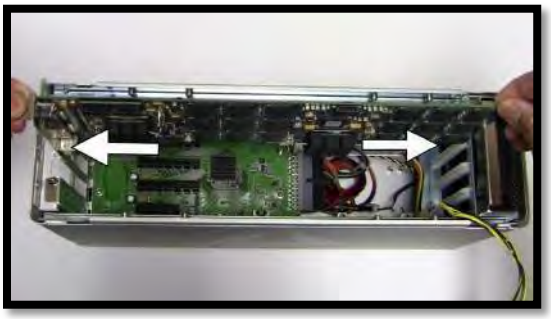
Prepare HDx cards (or PCIe cards)



Install the HDx card. Use the 1slot PCIe slot for the 1st HDx card.

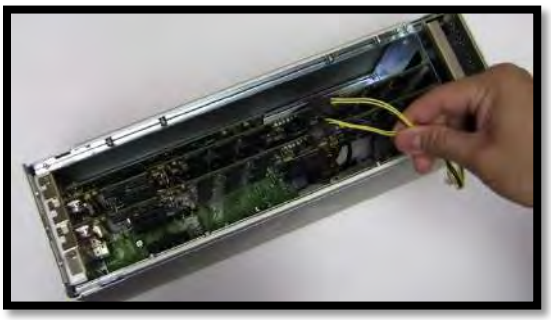


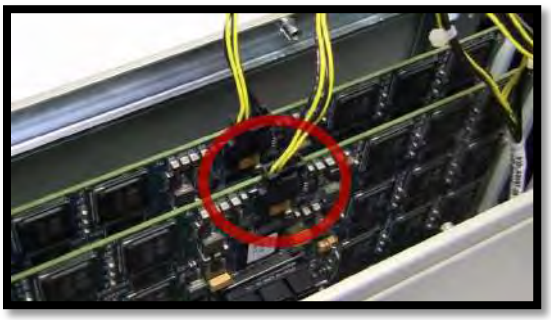
Align the HDX card above the card guide slot and push it down slowly until firmly seated into the slot.



Install the next HDX card, use the 2nd slot. Secure both HDx cards.

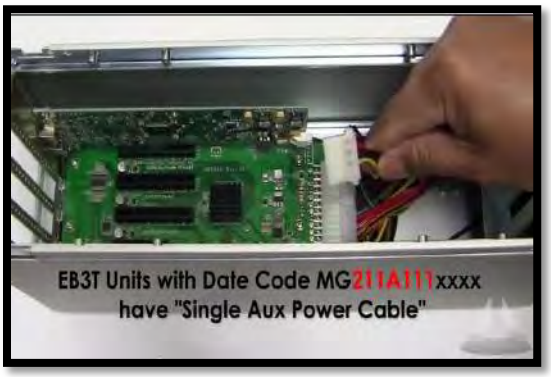
Attached the power adapter cable to HDX card





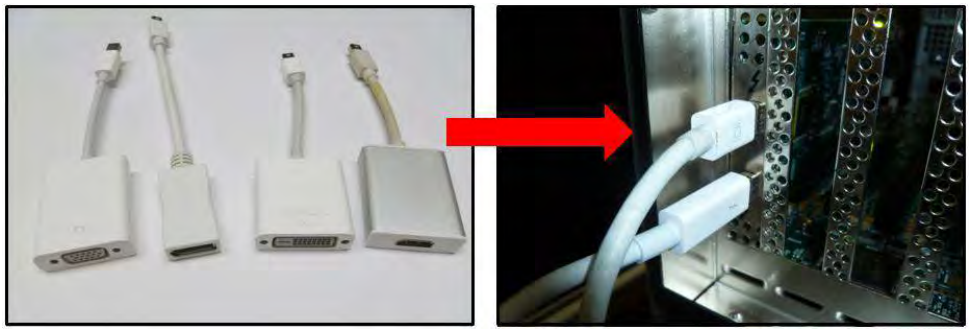
Auxiliary Power Cables

EB3T unit comes with an auxiliary power 4pin Molex connector.



Attaching Displays

You can use an appropriate Display Port connector to add a Display Port, HDMI, DVI, or VGA Display.
The Display Port connector can plug into the other Thunderbolt port on ExpressBox 3T
Make sure your display is plugged in and the appropriate adapter is connected.



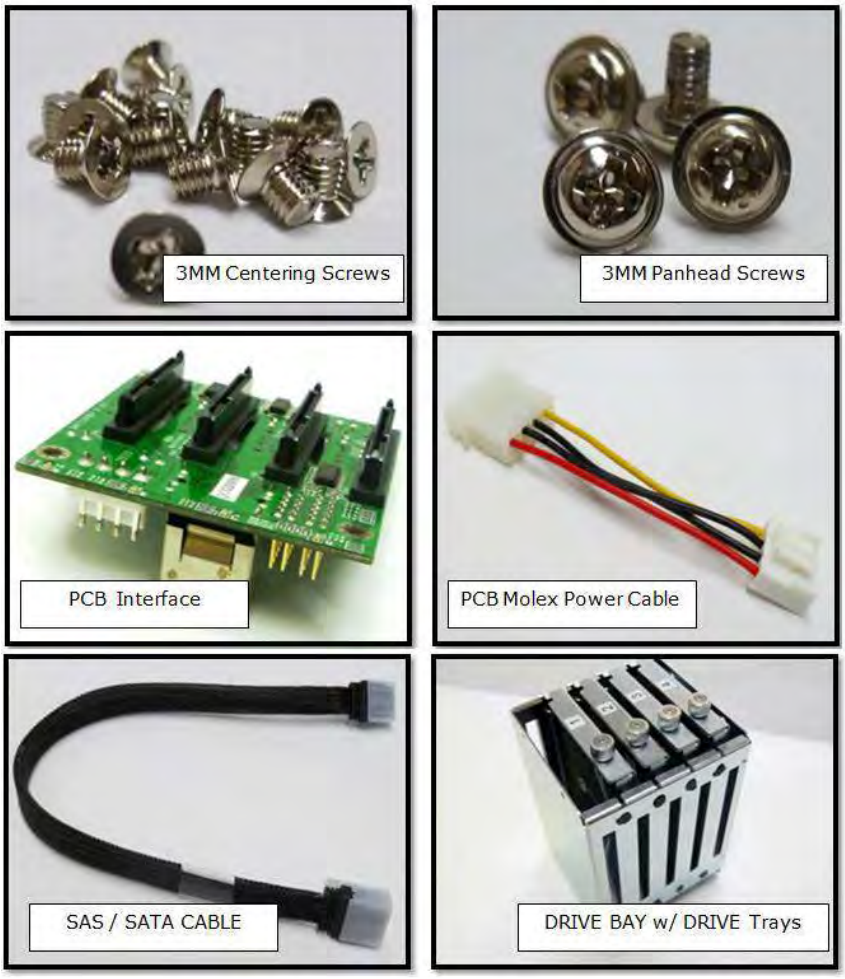
N-DRIVE CAGE – STORAGE KIT

The standard EB3T does not have an internal storage drive. Should you need one, you can either buy the EB3T-DB model or purchase the **N-Drive Cage**, which provides users with the ability to add (4) 2.5" hard drives to an ExpressBox 3T. Magma N-Drive Cage is a "Storage Kit" as shown from the picture below for storage drives upgrade.

The "Storage Kit" is composed of the following items:

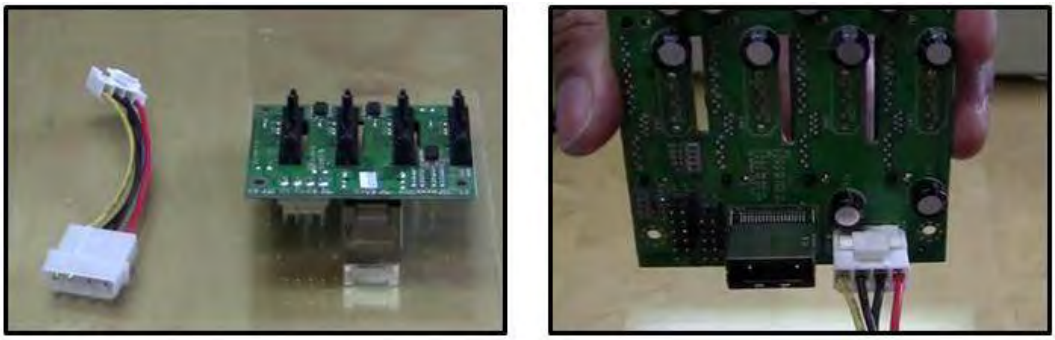
1. 3mm Centering Screws.
2. 3mm Panhead Screws.
3. PCB Interface.
4. 4pin molex-to-4pin Mimi power cable.
5. SAS / SATA Cable.
6. Drive Bay with 4 drive trays

NOTE
PCIe Controller Card and Drives are not included with the storage KIT

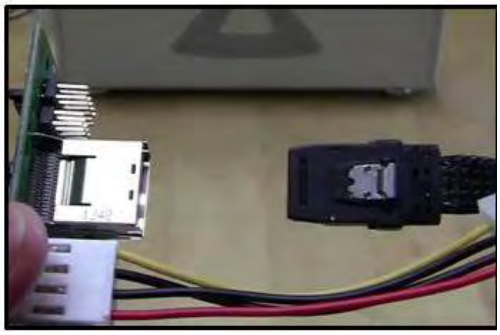


Storage Drive Installation

1. Connect Power Cable to Drive Interface Board

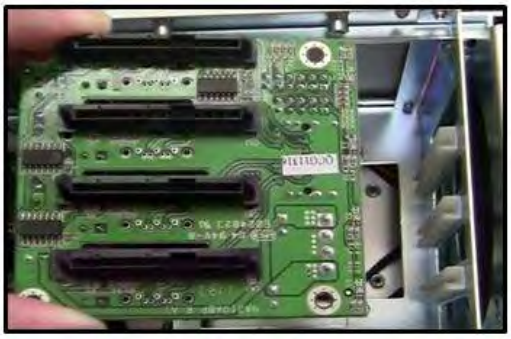


2. Connect SAS / SATA Cable to Interface Board

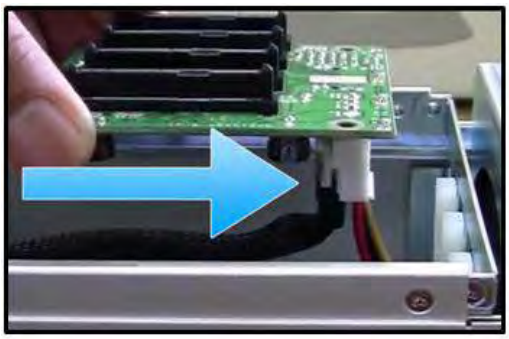


3. Connect EB3T Aux Cable to Interface Board Power Cable

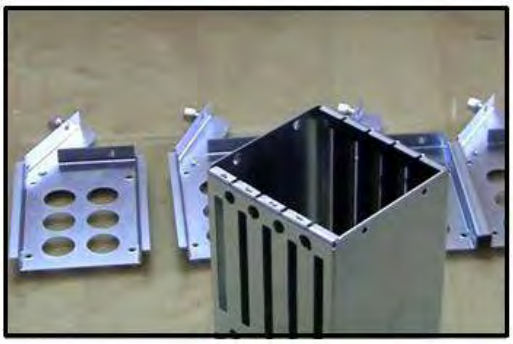
4. Mount Interface Board



5. 4pin Connector is closer to the front fan as shown from the picture below. Secure the Interface board.



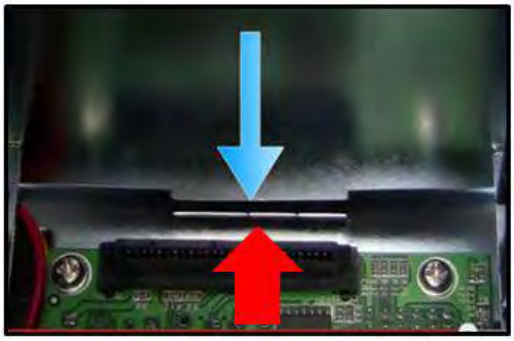
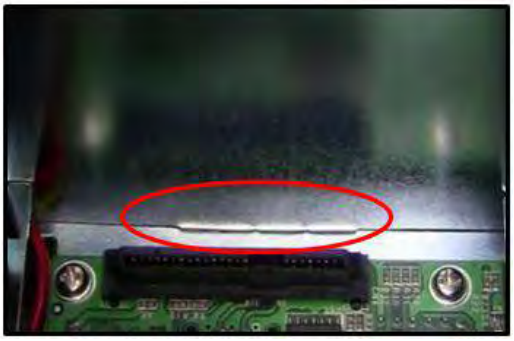
6. Remove all 4 Drive Trays as shown from the pictures below.



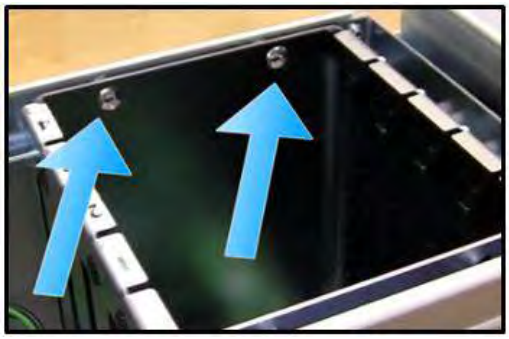
7. Install Drive Cage as shown from the pictures below.

8. The Label orientation should be far away from the Front fan.

9. Align and latch Metal Tab in SLOT.

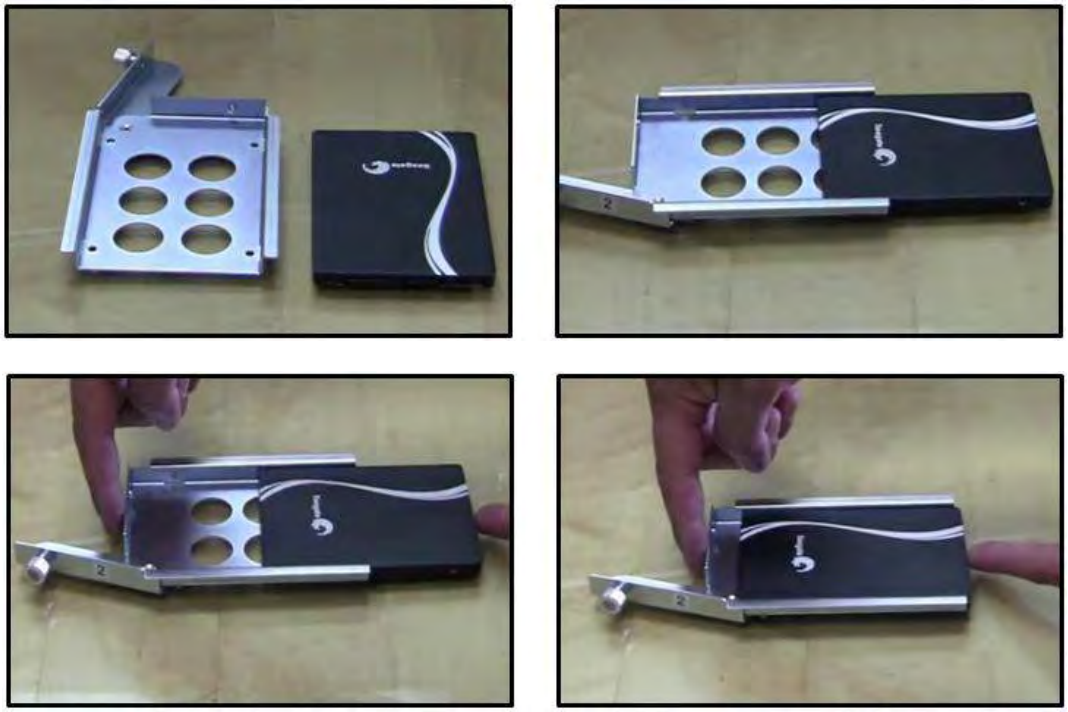



10. Secure Drive Cage / Housing

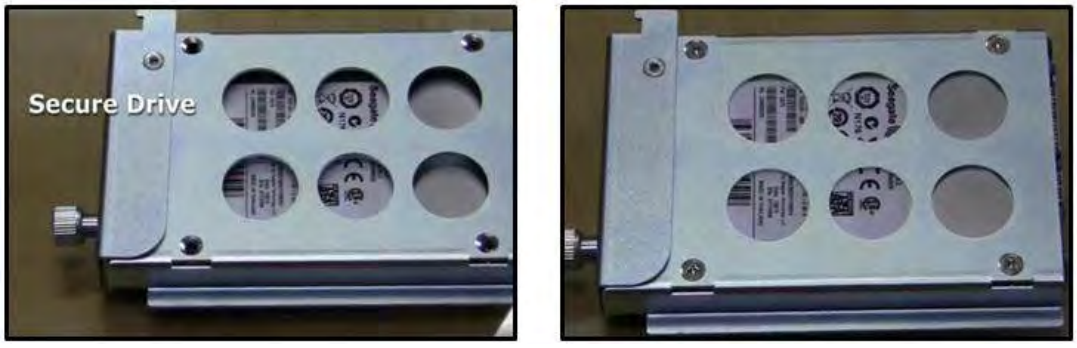


11. Place drive inside the tray as shown from the pictures below.

NOTE
Drives are not included with the storage KIT



12. Turn the tray over and secure the drive.



13. Drives are now ready

14. Install Drive Tray

15. Secure all drive trays.

Next step is to install the controller card. A controller card can be a RAID or Non-RAID PCIe card. If you are planning on setting up a RAID configuration you need a RAID controller card. Otherwise, a simple HBA PCIe controller will work.

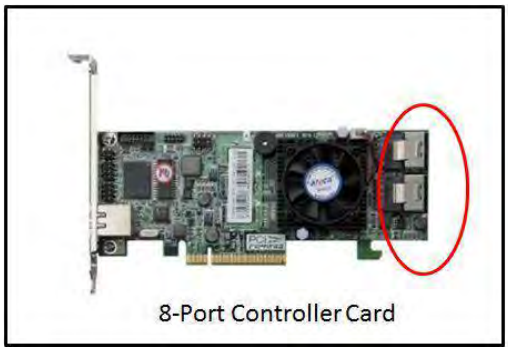
Magma does not sell a PCIe controller card. There are several companies such as ATTO, Areca, Adaptec and Startec and etc. that manufacture these type of cards.

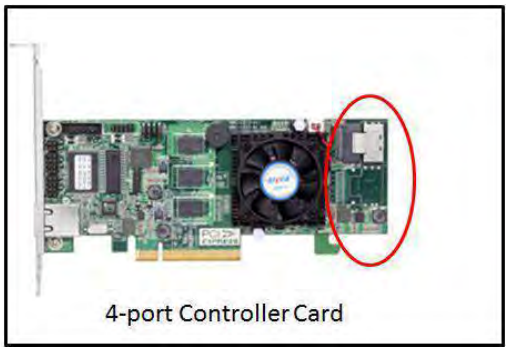
ATTO and ARECA are the two most common controller cards that are compatible with EB3T expansion unit.

Controller Card Installation

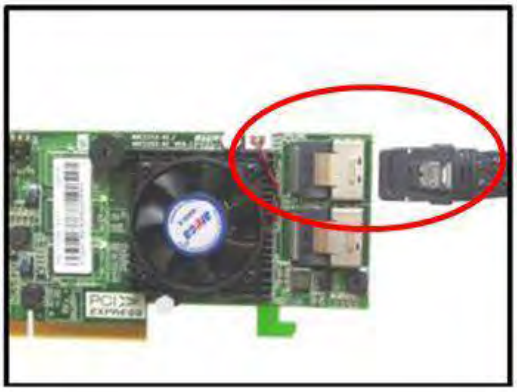
Use a disk controller card that can support 4 drives. We recommend using Areca Controller card or a PCIe controller card that is supported by Windows Operating system and Apple Mac OS X. for Mac OS, make sure it has an Apple Thunderbolt compatible driver. Below are pictures of two Arecas PCIe Controller cards.

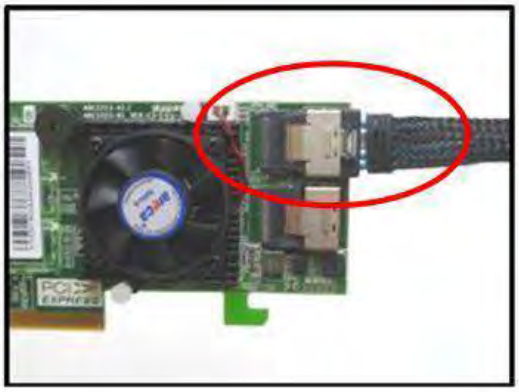
1. 8-port Controller card support 8 drives.
2. 4-port Controller card support 4 drives.

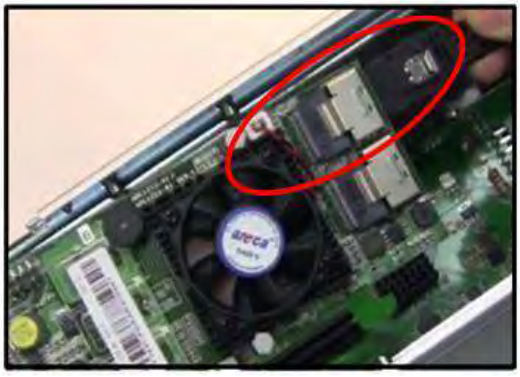




1. Connect the SAS / SATA Cable from the N-Drive cage to controller card.







2. Plug in Controller Card and secure it. Make sure the card is firmly seated into the PCIe slot.

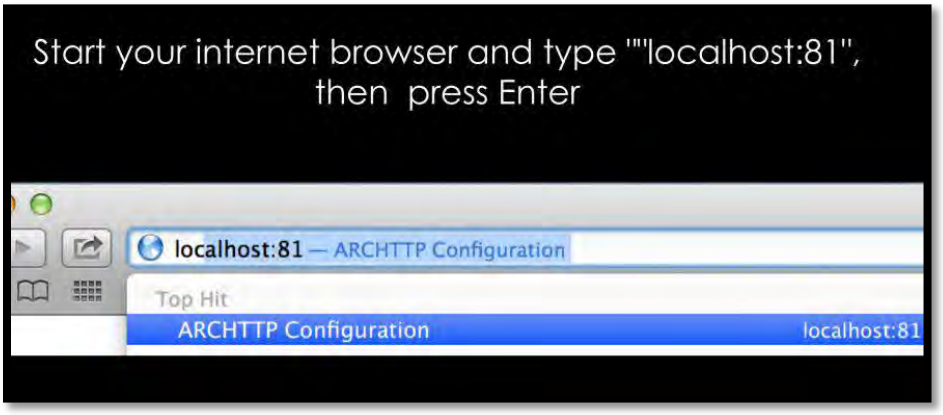
How to Configure SAS / SATA Raid

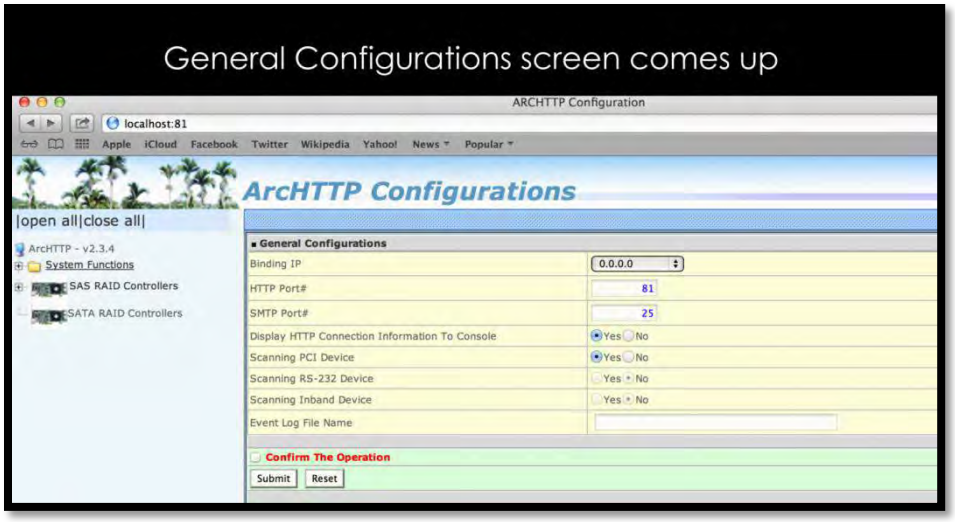
IMPORTANT
This chapter describes how to configure the disk controller card. This software configuration is specific only to **vendor Areca**. Different vendors (i.e. ATTO, Intel, LSI and etc.) of disk controller cards have their own software utility for RAID configuration and management. If you are using a non-Areca card make sure to check with the vendor or manufacturer of the card for further instructions.

Areca has its own Graphical User Interface for RAID configuration and management. You need to install Archttp first, follow the instructions below

1. Go to http://www.areca.com.tw
2. Click Support & Downloads
3. Go to Driver / Utility, select Windows
4. Under "Windows-ArcHTTP" click, Version V2.3.4 to download
5. Save File "winhttp_V2.3.4_130325.zip"
6. Extract the File
7. Click Install.exe to install Archttp
8. After Installation, shutdown computer. Connect Thunderbolt cable to Magma EB3T and computer.
9. Turn on the computer

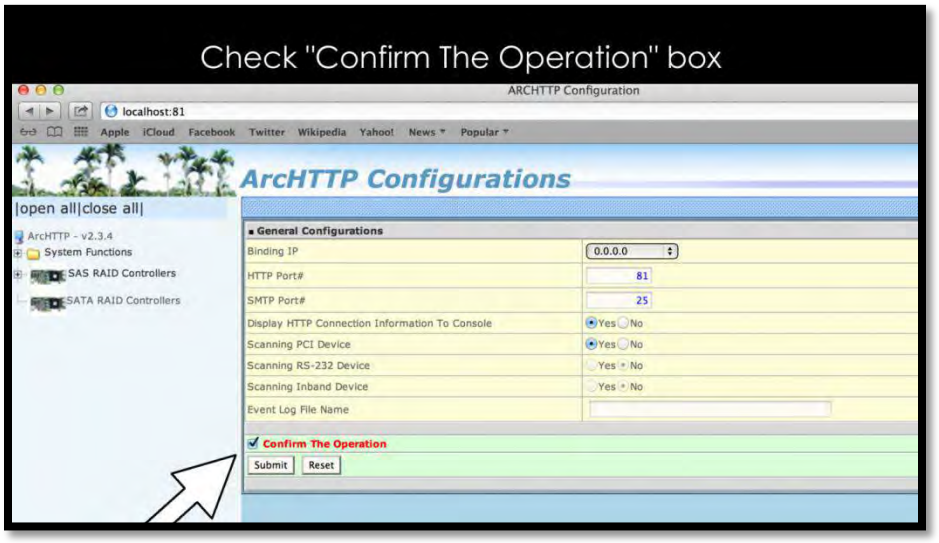
NOTE: These steps are applicable to Windows 7, Windows 8 and Mac OSx. Use Firefox / Mozilla as your Browser to launch the ARCHTTP.

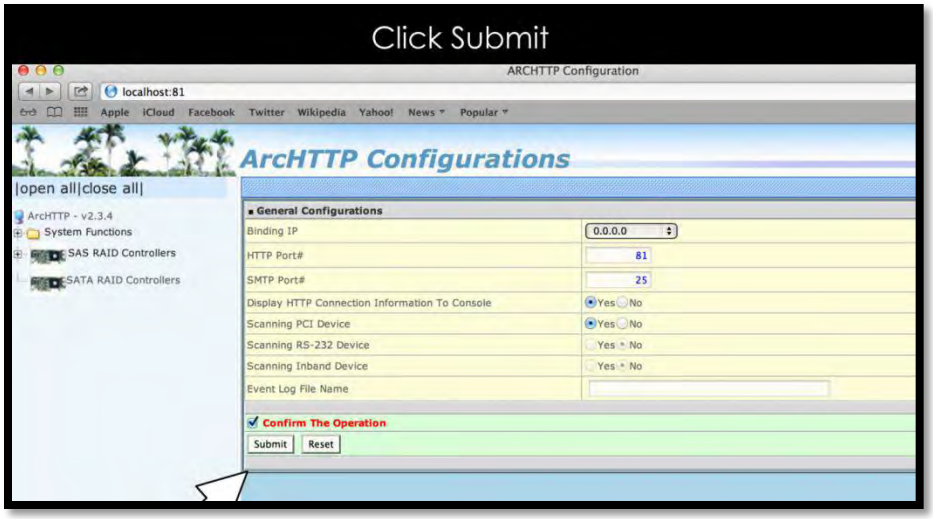


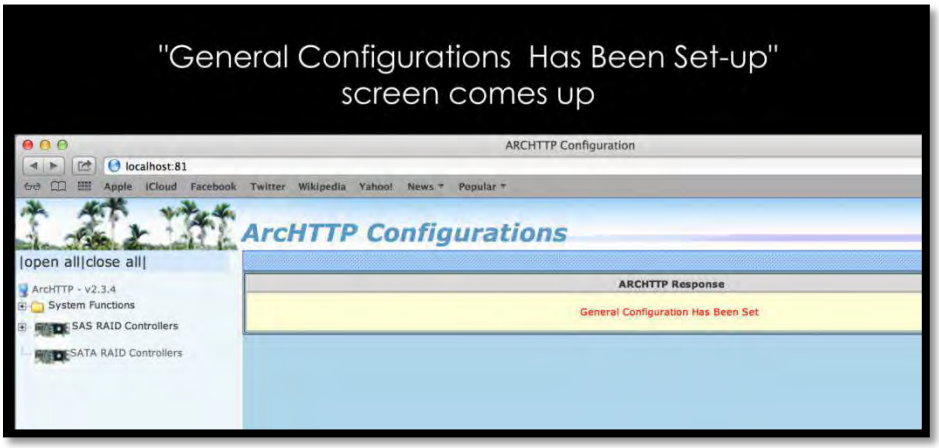


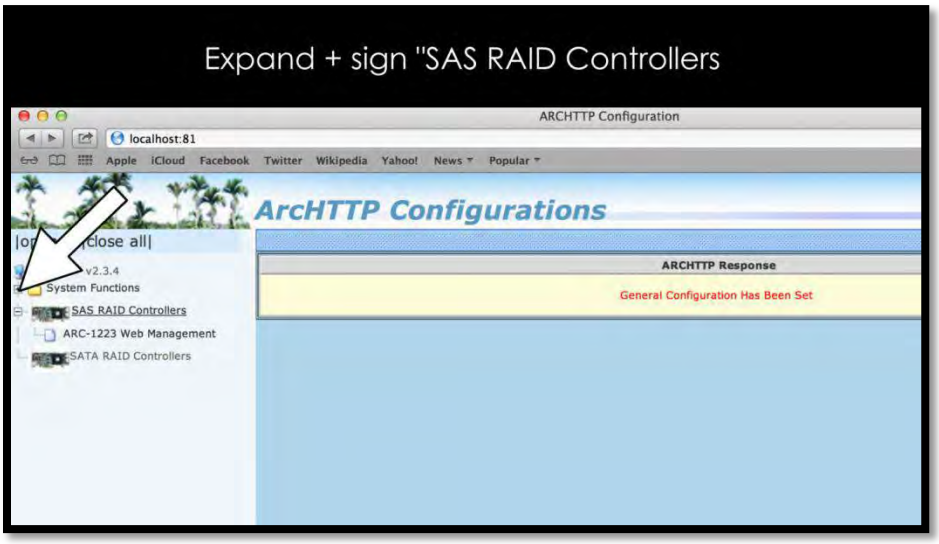
If you are unable to start or launch the Areca Web Management do these steps:

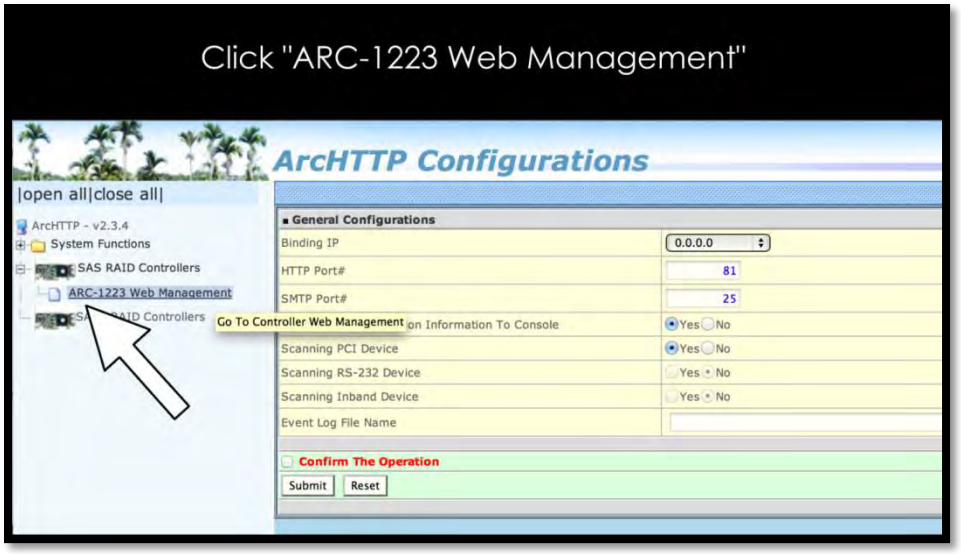
1. Clear Internet History. Reset Internet to default setting.
2. Shutdown computer. And unplug power from Magma EB3T.
3. Disconnect Thunderbolt Cable
4. Remove and reseat Areca controller card.
5. Reconnect power and Thunderbolt cable.
6. Turn on the computer. Start Internet browser and type “Localhost:81”




Click Submit
ARCHTTP Configuration
localhost:81
Apple iCloud Facebook Twitter Wikipedia Yahoo! News Popular
ArcHTTP Configurations
|open all|close all|
ArcHTTP - v2.3.4
System Functions
SAS RAID Controllers
SATA RAID Controllers
General Configurations
Binding IP
0.0.0.0
HTTP Port#
81
SMTP Port#
25
Display HTTP Connection Information To Console
Scanning PCI Device
Scanning RS-232 Device
Scanning Inband Device
Event Log File Name
Confirm The Operation
Submit
Reset


"General Configurations Has Been Set-up" screen comes up
ARCHTTP Configuration
localhost:81
Apple iCloud Facebook Twitter Wikipedia Yahoo! News Popular
ArcHTTP Configurations
|open all|close all|
ArcHTTP - v2.3.4
System Functions
SAS RAID Controllers
SATA RAID Controllers
ARCHTTP Response
General Configuration Has Been Set

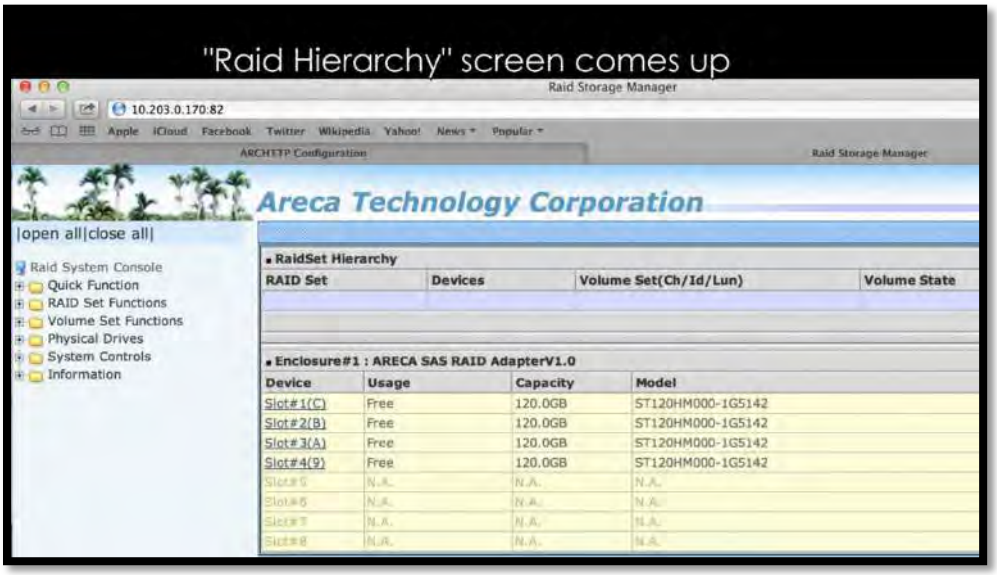

Expand + sign "SAS RAID Controllers
ARCHTTP Configuration
localhost:81
Apple iCloud Facebook Twitter Wikipedia Yahoo! News Popular
ArcHTTP Configurations
close all|
v2.3.4
System Functions
SAS RAID Controllers
ARC-1223 Web Management
SATA RAID Controllers
ARCHTTP Response
General Configuration Has Been Set

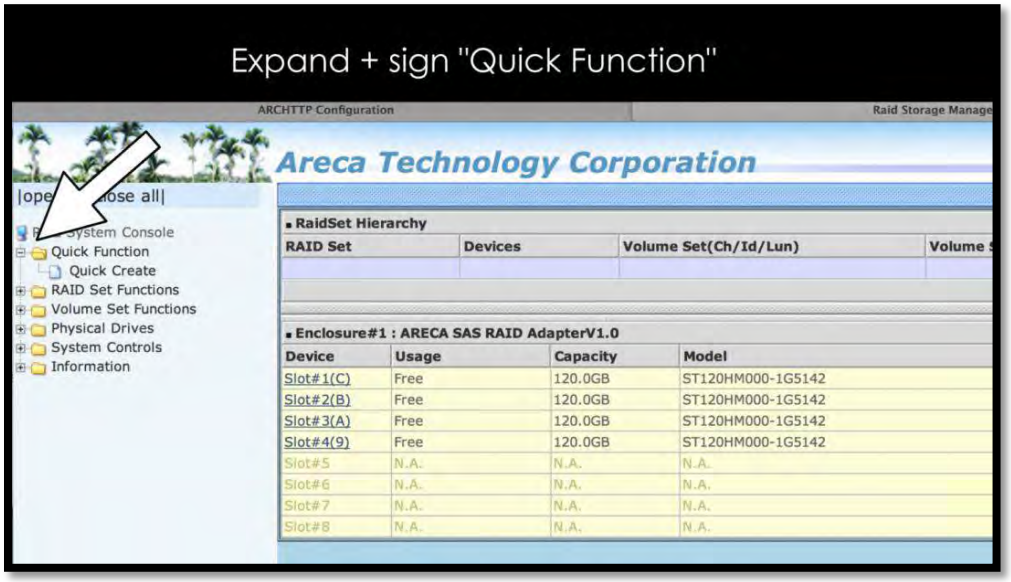

Click "ARC-1223 Web Management"
ArcHTTP Configurations
|open all|close all|
ArcHTTP - v2.3.4
System Functions
SAS RAID Controllers
ARC-1223 Web Management
Go To Controller Web Management
General Configurations
Binding IP
0.0.0.0
HTTP Port#
81
SMTP Port#
25
Scanning PCI Device
Yes No
Scanning RS-232 Device
Scanning Inband Device
Event Log File Name
Confirm The Operation
Submit
Reset

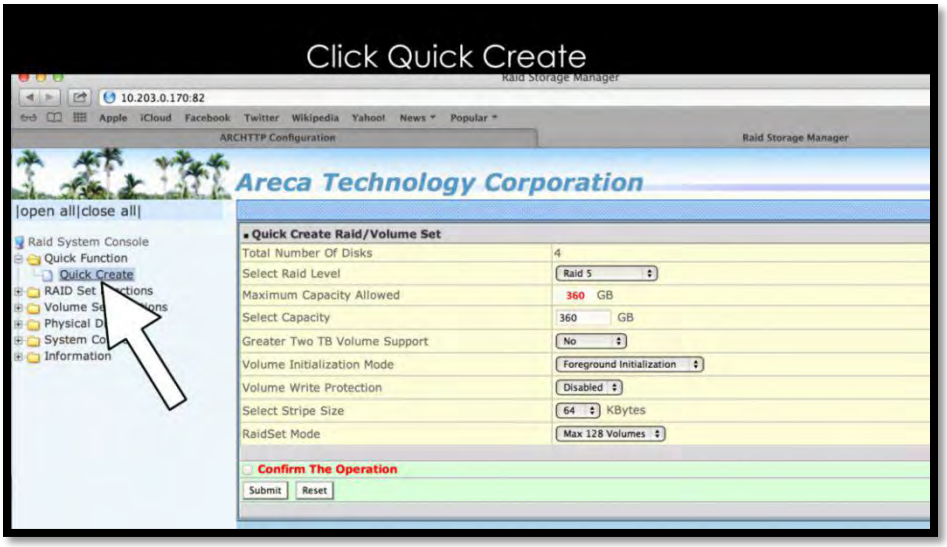
Name & Password screen comes up
Untitled
10.203.0.170:82
iCloud
Facebook
Twitter
Wikipedia
Yahoo!
News
Popular
ARCHTTP Configuration
To view this page, you must log in to this area on 10.203.0.170:82:
Raid Console
Your login information will be sent securely.
Name:
Password:
Remember this password in my keychain
Cancel
Log In

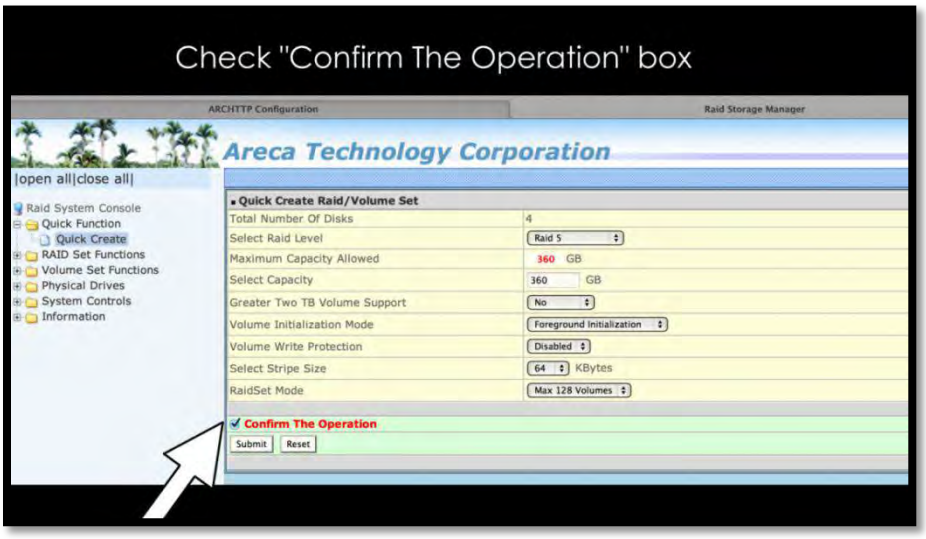
Name is Admin. Password is 0000
Untitled
10.203.0.170:82
iCloud
Facebook
Twitter
Wikipedia
Yahoo!
News
Popular
ARCHTTP Configuration
To view this page, you must log in to this area on 10.203.0.170:82:
Raid Console
Your login information will be sent securely.
Name:
Password:
Remember this password in my keychain
Cancel
Log In

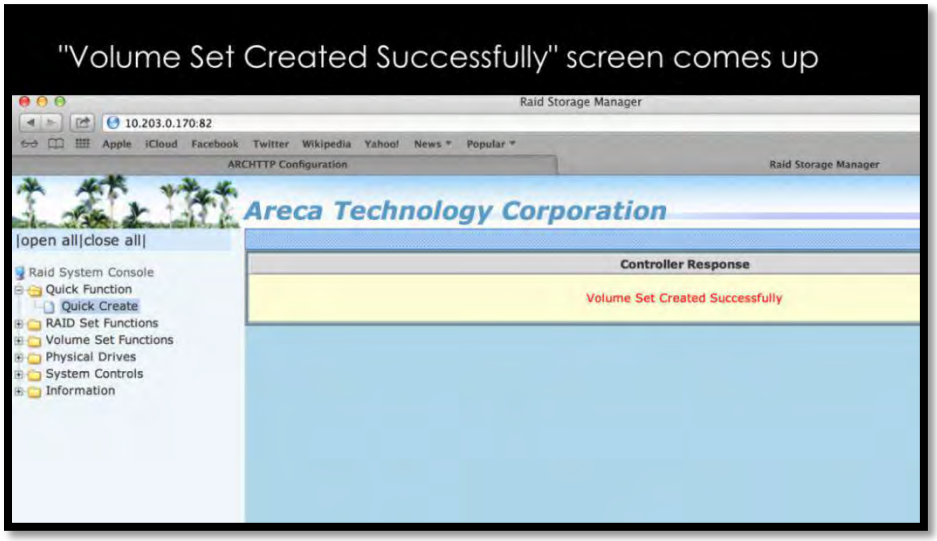
Cick Log In
To view this page, you must log in to this area on 10.203.0.170:82:
Raid Console
Your login information will be sent securely.
Name: Admin
Password: ••••
Remember this password in my keychain
Cancel
Log In


"Raid Hierarchy" screen comes up
Raid Storage Manager
10.203.0.170:82
Areca Technology Corporation
|open all|close all|
Raid System Console
Quick Function
RAID Set Functions
Volume Set Functions
Physical Drives
System Controls
Information
RaidSet Hierarchy
RAID Set
Devices
Volume Set(Ch/Id/Lun)
Volume State
Enclosure#1 : ARECA SAS RAID AdapterV1.0
Device
Usage
Capacity
Model
Slot#1(C) Free 120.0GB ST120HM000-1G5142
Slot#2(B) Free 120.0GB ST120HM000-1G5142
Slot#3(A) Free 120.0GB ST120HM000-1G5142
Slot#4(9) Free 120.0GB ST120HM000-1G5142

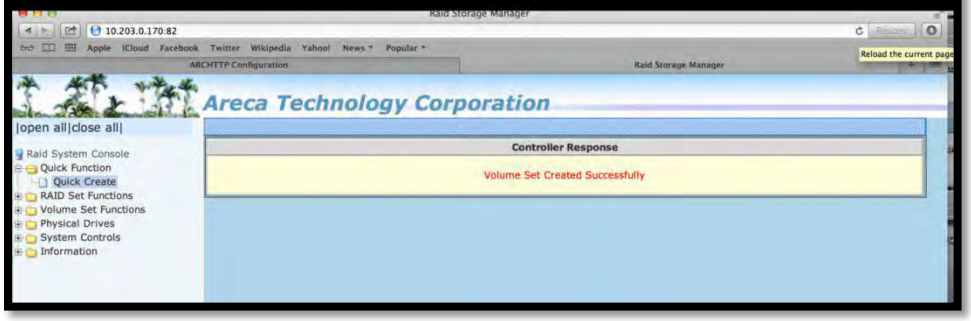

Expand + sign "Quick Function"
ARCHTTP Configuration
Areca Technology Corporation
Raid System Console
Quick Function
Quick Create
RAID Set Functions
Volume Set Functions
Physical Drives
System Controls
Information
RaidSet Hierarchy
RAID Set
Devices
Volume Set(Ch/Id/Lun)
Enclosure#1 : ARECA SAS RAID AdapterV1.0
Device
Usage
Capacity
Model
Slot#1(C) Free 120.0GB ST120HM000-1G5142
Slot#2(B) Free 120.0GB ST120HM000-1G5142
Slot#3(A) Free 120.0GB ST120HM000-1G5142
Slot#4(9) Free 120.0GB ST120HM000-1G5142


Click Quick Create
Raid Storage Manager
10.203.0.170:82
Apple iCloud Facebook Twitter Wikipedia Yahoo! News Popular
ARCHTTP Configuration
Raid Storage Manager
Areca Technology Corporation
|open all|close all|
Raid System Console
Quick Function
Quick Create
RAID Set Functions
Volume Set Functions
Physical Drives
System Controls
Information
Quick Create Raid/Volume Set
Total Number Of Disks 4
Select Raid Level Raid 5
Maximum Capacity Allowed 360 GB
Select Capacity 360 GB
Greater Two TB Volume Support No
Volume Initialization Mode Foreground Initialization
Volume Write Protection Disabled
Select Stripe Size 64 KBytes
RaidSet Mode Max 128 Volumes
Confirm The Operation
Submit Reset

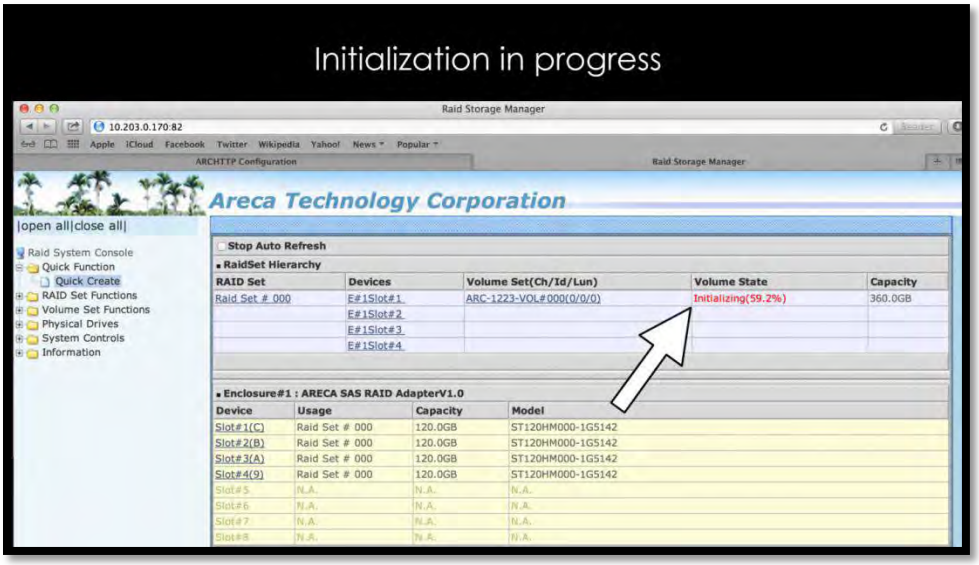

Check "Confirm The Operation" box
ARCHTTP Configuration
Raid Storage Manager
Areca Technology Corporation
|open all|close all|
Raid System Console
Quick Function
Quick Create
RAID Set Functions
Volume Set Functions
Physical Drives
System Controls
Information
Quick Create Raid/Volume Set
Total Number Of Disks 4
Select Raid Level Raid 5
Maximum Capacity Allowed 360 GB
Select Capacity 360 GB
Greater Two TB Volume Support No
Volume Initialization Mode Foreground Initialization
Volume Write Protection Disabled
Select Stripe Size 64 KBytes
RaidSet Mode Max 128 Volumes
Confirm The Operation
Submit Reset


"Volume Set Created Successfully" screen comes up
Raid Storage Manager
10.203.0.170:82
Apple iCloud Facebook Twitter Wikipedia Yahoo! News Popular
ARCHTTP Configuration
Raid Storage Manager
Areca Technology Corporation
|open all|close all|
Raid System Console
Quick Function
Quick Create
RAID Set Functions
Volume Set Functions
Physical Drives
System Controls
Information
Controller Response
Volume Set Created Successfully

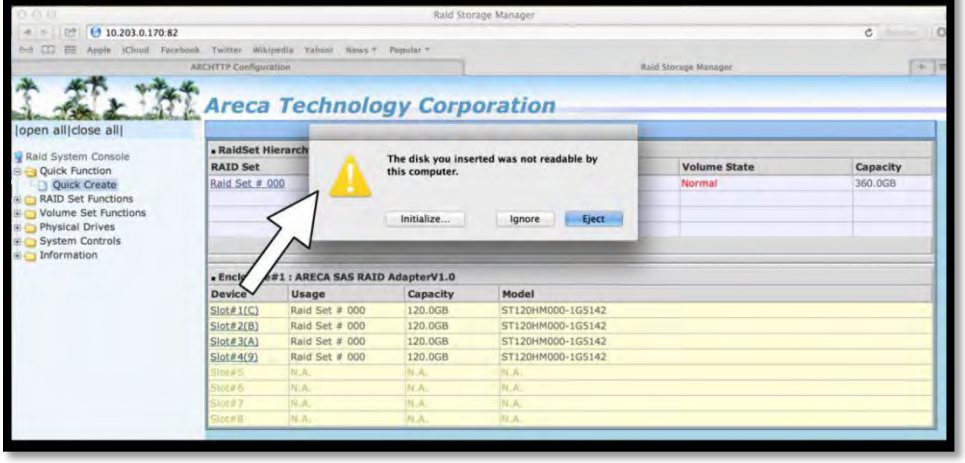
Reload or refresh the page to view "initializtion" progress

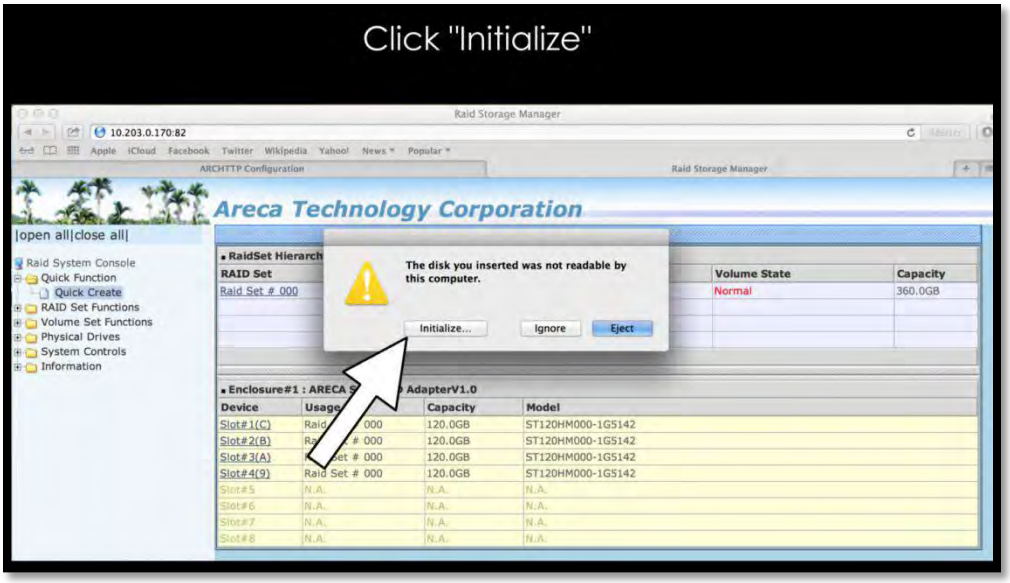


Initialization in progress



When initialization is done, this warning box comes up



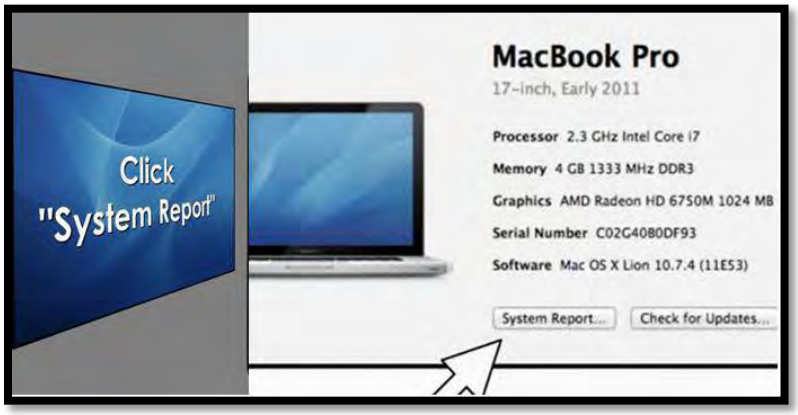


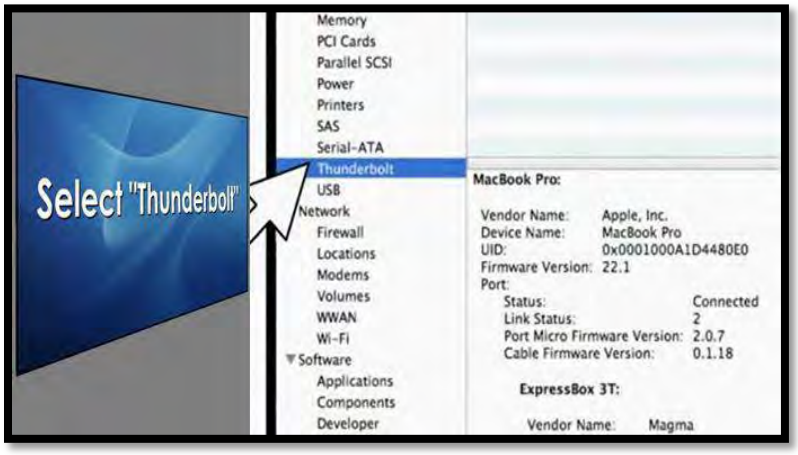
After completing the Raid setup you must activate the drive and create partition. Different Operating Systems have their own utility for creating partitions. On Mac OS you have to use the Disk Utility. On Windows you have to use Disk Management.

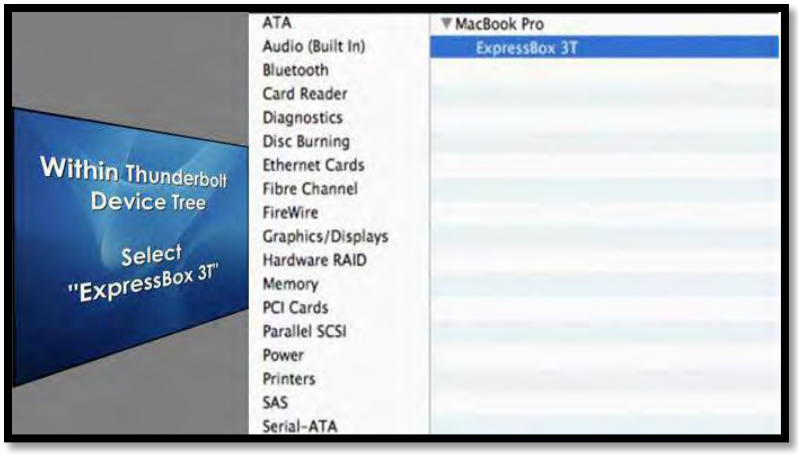
IMPORTANT
"The Disk Utility on Mac OSx and Disk Management on Windows OS" are applicable to all disk controller cards / vendors.

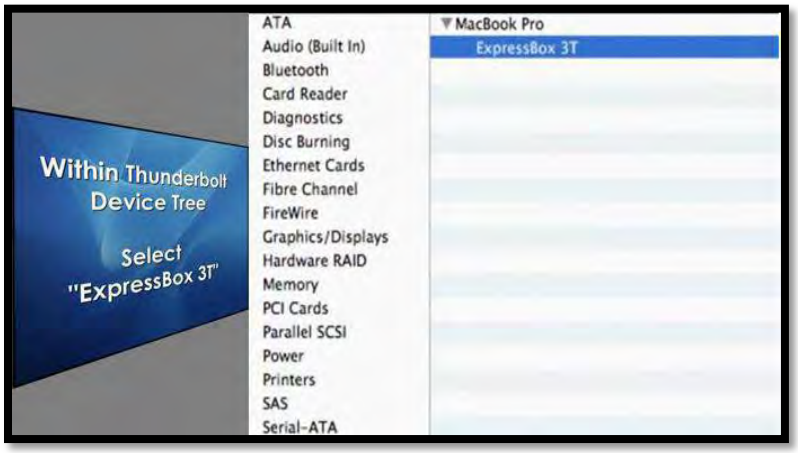
How to check & Verify Magma Device in Apple System Profiler

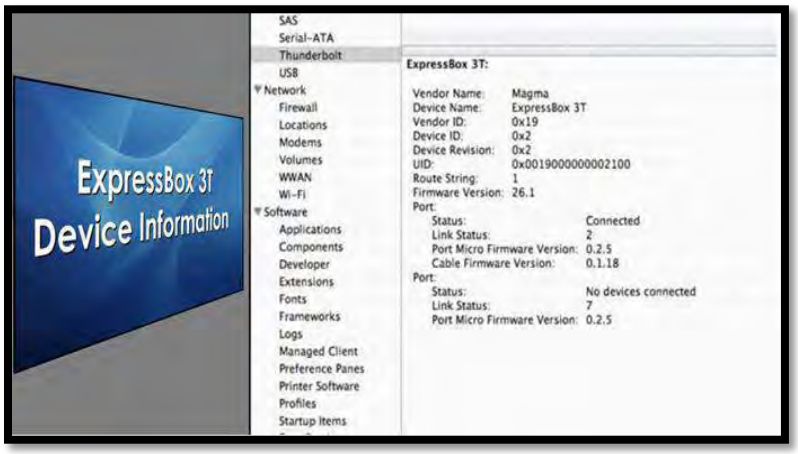
Click
"More Info"
About This Mac
Mac OS X
Version 10.7.4
Software Update...
Processor 2.3 GHz Intel Core i7
Memory 4 GB 1333 MHz DDR3
Startup Disk Macintosh HD
More Info...


Click
"System Report"
MacBook Pro
17-inch, Early 2011
Processor 2.3 GHz Intel Core i7
Memory 4 GB 1333 MHz DDR3
Graphics AMD Radeon HD 6750M 1024 MB
Serial Number C02G40B0DF93
Software Mac OS X Lion 10.7.4 (11E53)
System Report...
Check for Updates...

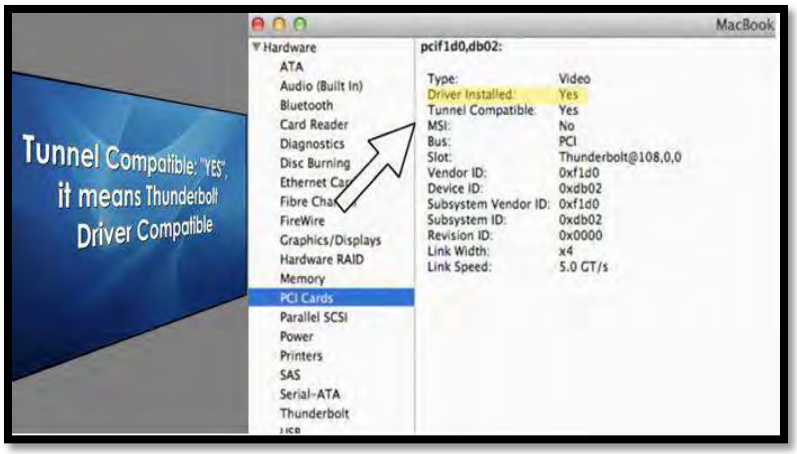

Select "Thunderbolt"
Memory
PCI Cards
Parallel SCSI
Power
Printers
SAS
Serial-ATA
Thunderbolt
USB
Network
Firewall
Locations
Modems
Volumes
WWAN
Wi-Fi
Software
Applications
Components
Developer
MacBook Pro:
Vendor Name: Apple, Inc.
Device Name: MacBook Pro
UID: 0x0001000A1D4480E0
Firmware Version: 22.1
Port:
Status: Connected
Link Status: 2
Port Micro Firmware Version: 2.0.7
Cable Firmware Version: 0.1.18
ExpressBox 3T:
Vendor Name: Magma


Within Thunderbolt Device Tree
Select "ExpressBox 3T"
ATA
Audio (Built In)
Bluetooth
Card Reader
Diagnostics
Disc Burning
Ethernet Cards
Fibre Channel
FireWire
Graphics/Displays
Hardware RAID
Memory
PCI Cards
Parallel SCSI
Power
Printers
SAS
Serial-ATA
MacBook Pro
ExpressBox 3T


Within Thunderbolt Device Tree
Select "ExpressBox 3T"
ATA
Audio (Built In)
Bluetooth
Card Reader
Diagnostics
Disc Burning
Ethernet Cards
Fibre Channel
FireWire
Graphics/Displays
Hardware RAID
Memory
PCI Cards
Parallel SCSI
Power
Printers
SAS
Serial-ATA
MacBook Pro
ExpressBox 3T


ExpressBox 3T Device Information
SAS
Serial-ATA
Thunderbolt
USB
Network
Firewall
Locations
Modems
Volumes
WWAN
Wi-Fi
Software
Applications
Components
Developer
Extensions
Fonts
Frameworks
Logs
Managed Client
Preference Panes
Printer Software
Profiles
Startup Items
ExpressBox 3T:
Vendor Name: Magma
Device Name: ExpressBox 3T
Vendor ID: 0x19
Device ID: 0x2
Device Revision: 0x2
UID: 0x0019000000002100
Route String: 1
Firmware Version: 26.1
Port:
Status: Connected
Link Status: 2
Port Micro Firmware Version: 0.2.5
Cable Firmware Version: 0.1.18
Port:
Status: No devices connected
Link Status: 7
Port Micro Firmware Version: 0.2.5

How to check & Verify PCIe Device

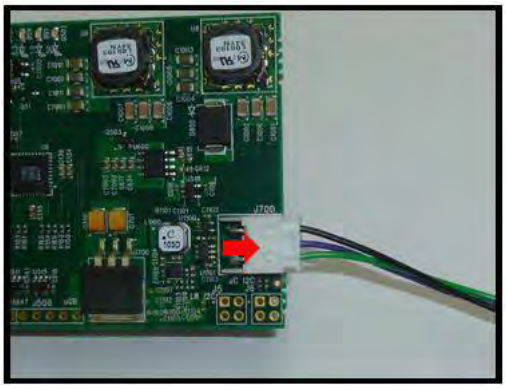
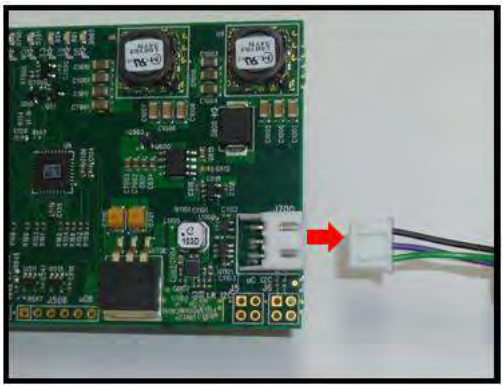


Chapter 5 Thunderbolt Interface Card Upgrade

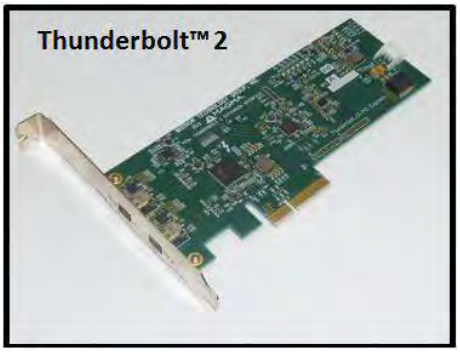
Interface Card Installation

Uninstall the existing Thunderbolt Interface card in the chassis prior to installing the new Thunderbolt™ 2 Interface card.

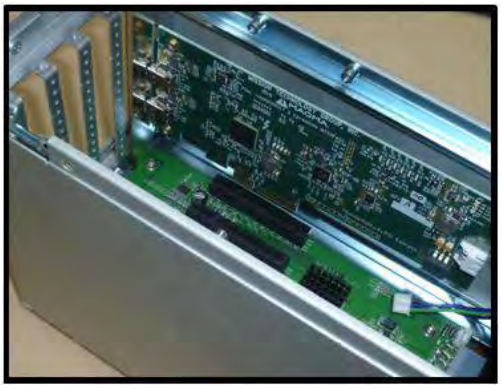
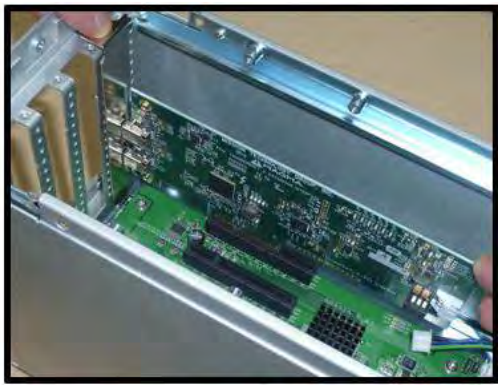
1. Remove the screw on top of the mounting bracket.
2. Disconnect the 3-pin wire / power cable from the Interface card, as shown from pictures below.

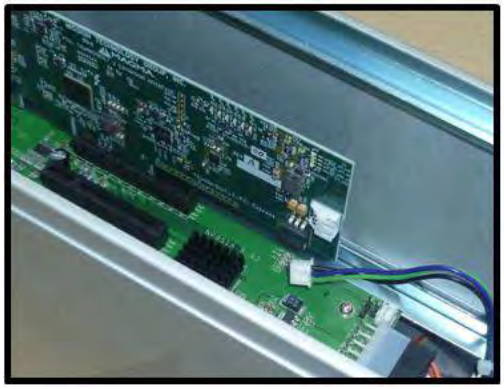
3. Gently pull the Thunderbolt Interface card out in the PCIe slot.
4. Prepare the new Thunderbolt™ 2 Interface card (see picture below).



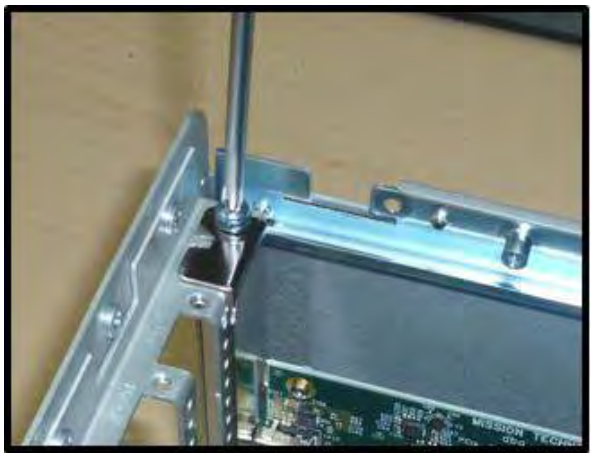
1. Align the Interface card on top of the PCIE slot.
2. Gently push the card until it is firmly seated in the PCIe slot

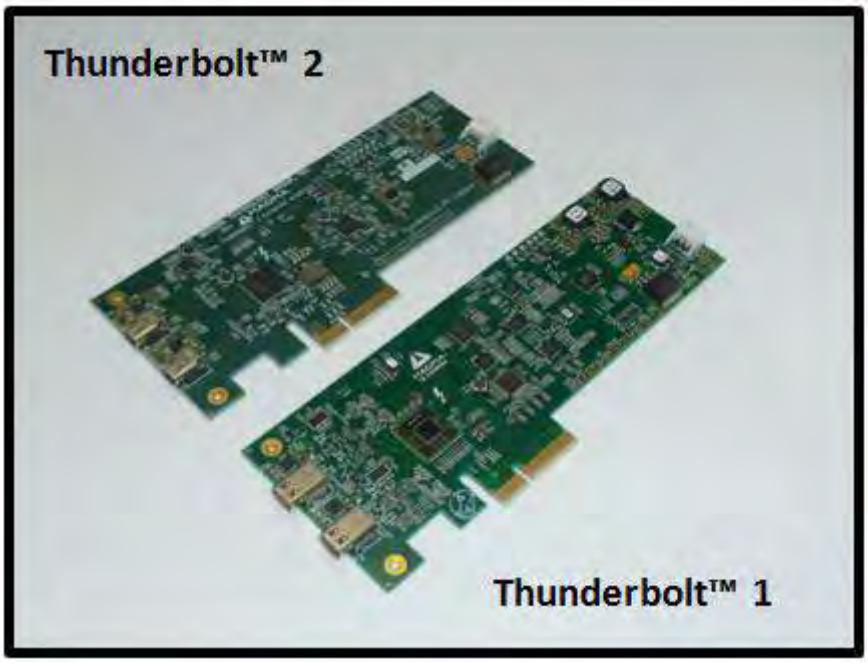
3. Reconnect the 3-pin wire / power cable to Thunderbolt™ 2 Interface card (see pictures below).



4. Secure the interface card.



NOTE
The new Thunderbolt™ 2 Interface card is shorter that the old Thunderbolt™ 1 Interface card.
.

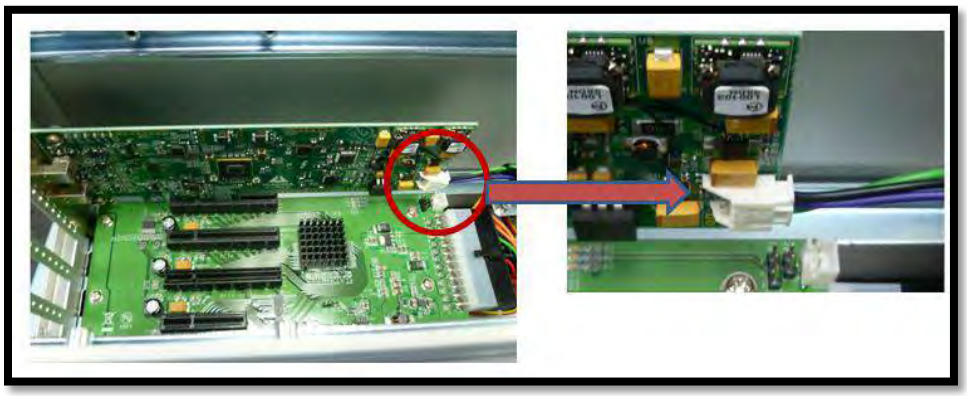


	Thunderbolt™ 1	Thunderbolt™ 2
Vendor ID (Magma)	0X19	0X19
UID	0X00190003	0X00190008
Mac OS Supported	10.8 below	10.9 and above
Speed	10Gb/s	20Gb/s
Lane width	X4	X4
# of LEDs	5	10

Chapter 6 Troubleshooting

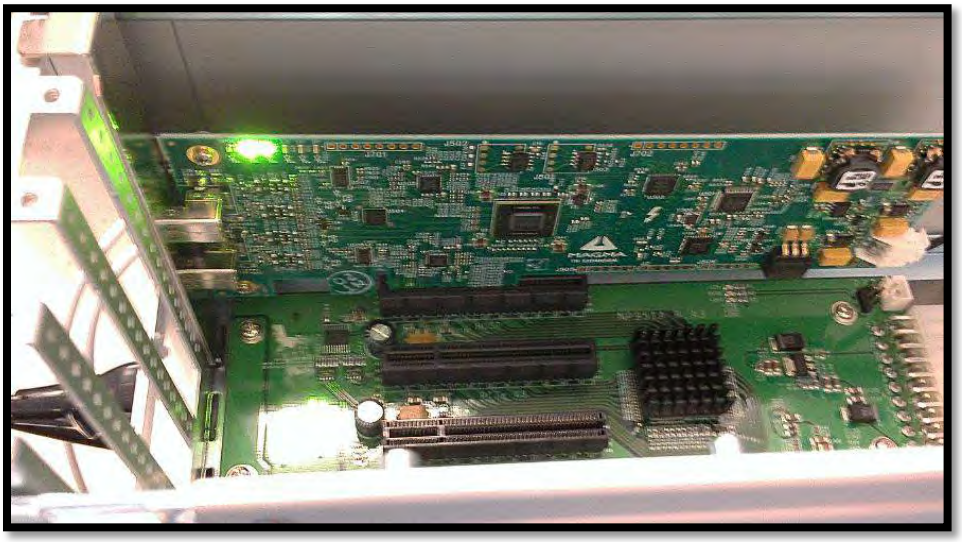
Q: If the Thunderbolt card fails to power up, what should I check?

A: Check the power stand-by cable; make sure it is firmly connected to the power receptacle of the Thunderbolt Interface card.



Q: How do I know if ExpressBox 3T power supply is working?

A: If the Thunderbolt card is properly seated and connected, there should be two green LEDs (shown) when black power cable is plugged in, as shown below.



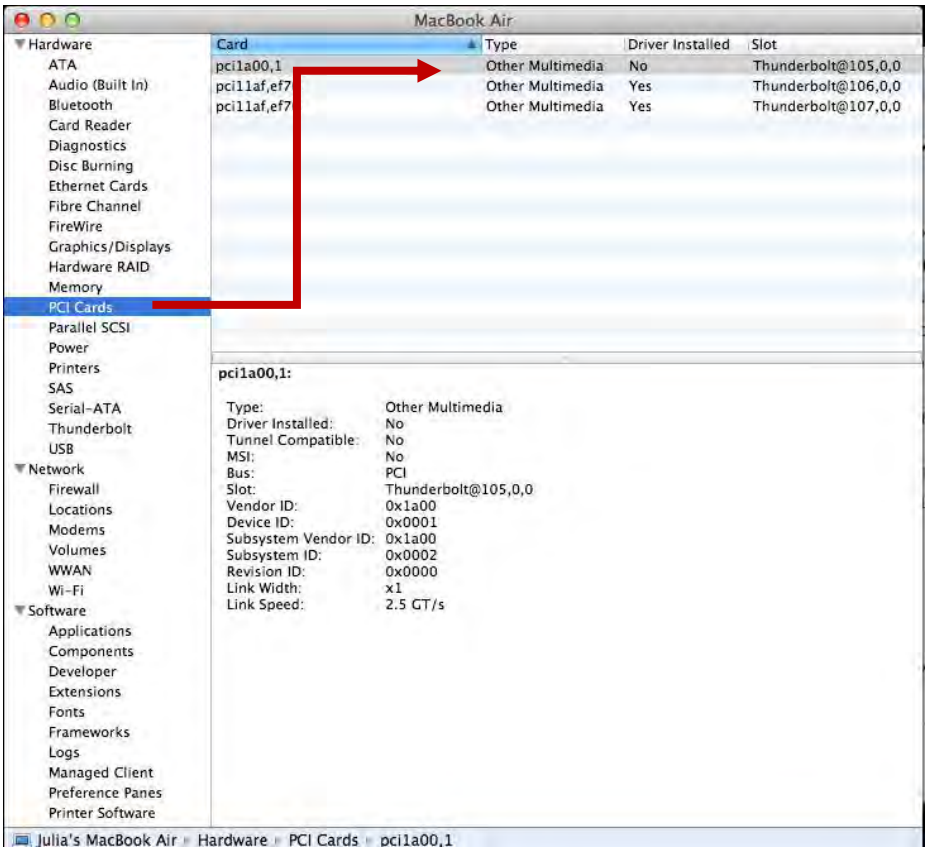
Q. If ExpressBox 3T does not power up how do I determine whether I have a bad power supply, a bad interface card or defective cable?

A: A working system should illuminate - Five Green LEDs D519, D7000, D701, D24 AND D21 on the interface card, which are located on the top left corner.

- When you have a Bad Power Supply, you won't see any Green LEDs lit at all on the Interface card.
- When you have a bad cable, you don't see LEDs D701, D24 AND D21 coming on. Swap or replaced the Thunderbolt Cable.
- If you already swapped the Thunderbolt cable and still LEDs D701, D24 AND D21 are not coming on this indicates you have a bad interface card.

Q: How can I determine if the driver for my PCIe card is Thunderbolt Compatible?

A: Thunderbolt Tunneling is required for Mac OS. In Apple System Profile, click on the specific PCIe card in question to see if it's Thunderbolt Tunnel Compatible. If it shows "Yes" then Thunderbolt tunneling has been enabled. If it shows "No", then the driver does not work through Thunderbolt and the PCIe card will not be visible in ExpressBox 3T.



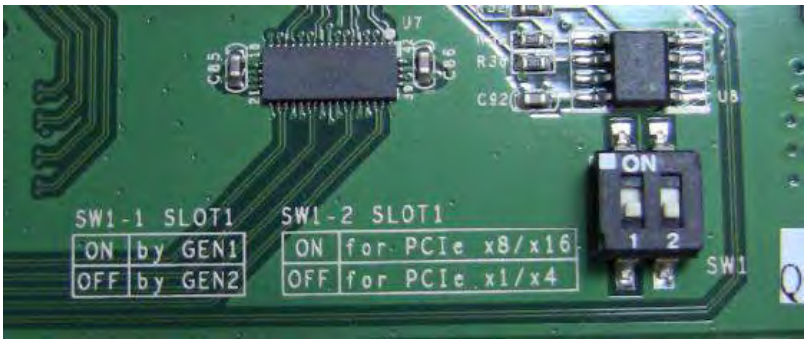
Q. My PCIe card is not getting detected when installed in 1st PCIE slot, what should I do?

A. You have to configure the DIP Switch (SW1) on the backplane, setting it to proper configuration to match the PCIE card specs.

This troubleshooting is only applicable to **Rev A5.1 backplane.** The main function of this DIP Switch is as follows

- To set the 1st PCIe slot to train to either GEN1 or GEN2

- **To allow a x8 or x16 PCIE card to run under x4 slot**



1. If you are installing an X8 – Gen1 PCIE card: set SW1 to ON and SW2 to ON

2. If you are installing an x8 – Gen2 PCIE card: set SW1 to OFF and SW2 to ON

3. If you are installing an X4 – Gen1 PCIE card: set SW1 to ON and SW2 to OFF

4. If you are installing an x4 - Gen2 PCIE card: set SW1 to OFF and SW2 to OFF

NOTE: Default setting: 1= OFF; 2= OFF

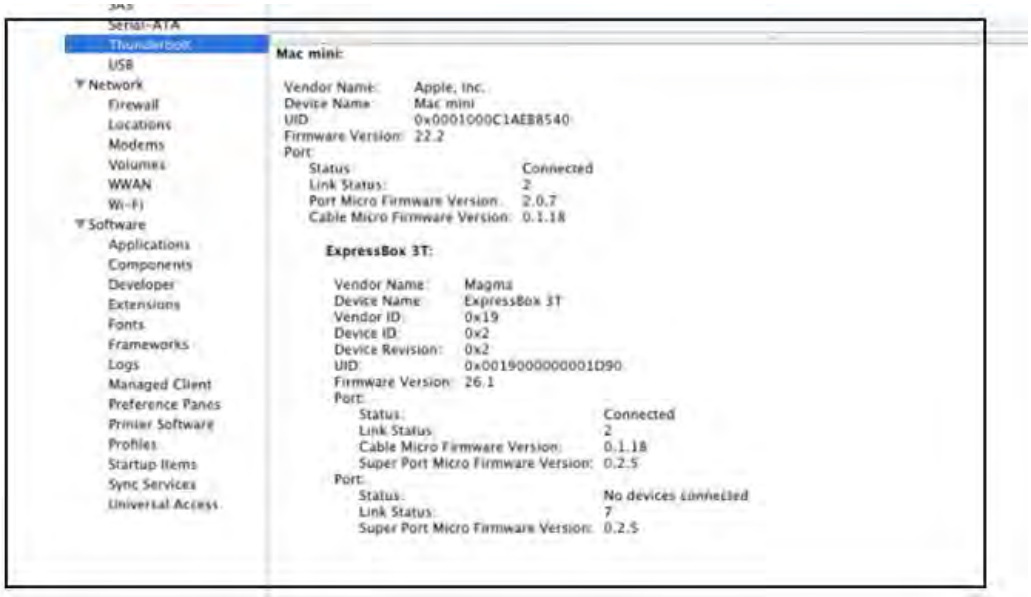
Q: Can I daisy chain ExpressBox 3T with more ExpressBox 3T?

A: Yes, but realize that aggregate bandwidth is limited to 10Gbps through the Thunderbolt port and PCI address and IO space can be limited so the type of cards installed in the chassis may limit the number that can be daisy chained successfully.

If a daisy chain device doesn't work; check to see if a RED led (on the Magma Thunderbolt Card in the first slot of ExpressBox 3T) is on. If so, the daisy chained device is drawing too much power and the current limiting has kicked in and has turned off the power to the downstream device.

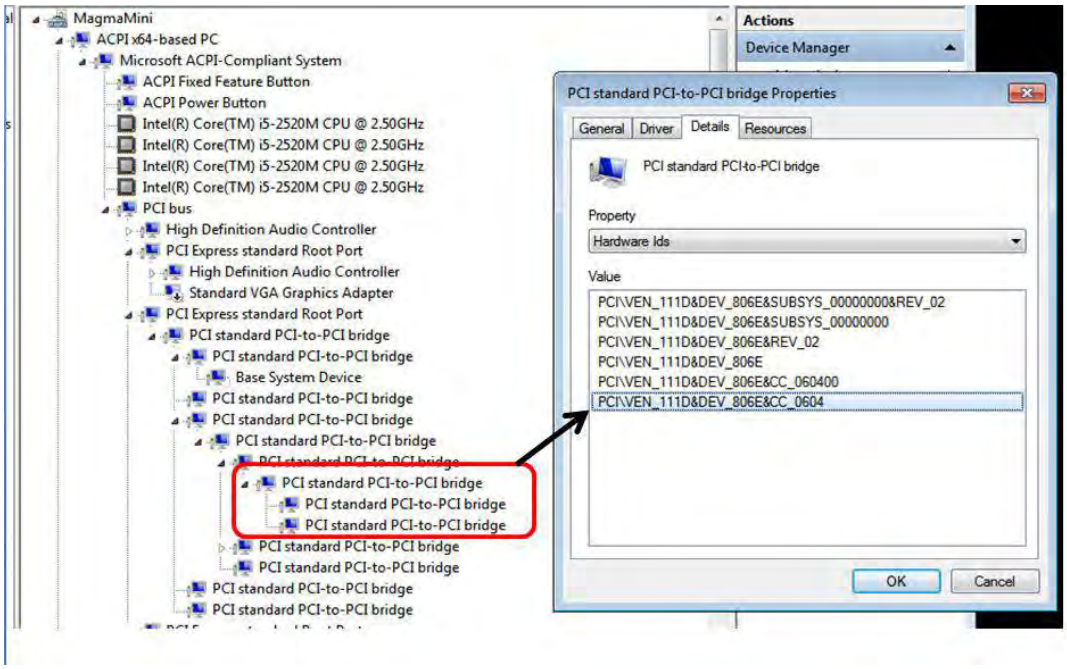
Q: Will ExpressBox 3T show up in Apple System Profiler or Windows Device Manager without any PCIe cards installed?

Yes. In Apple System Profiler → Thunderbolt → Status: Connected → ExpressBox 3T



In Windows→ Control Panel → Device Manager → View by connection

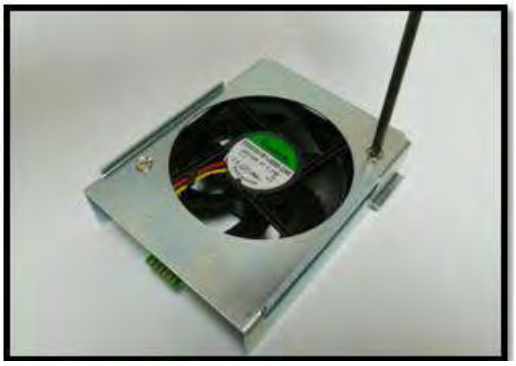
You should see these three PCI-to-PCI bridges. Right click on it and select "Properties", select Hardware Ids from dropdown list, you should see PCI\Ven_111D


MagmaMini
ACPI x64-based PC
Microsoft ACPI-Compliant System
ACPI Fixed Feature Button
ACPI Power Button
Intel(R) Core(TM) i5-2520M CPU @ 2.50GHz
Intel(R) Core(TM) i5-2520M CPU @ 2.50GHz
Intel(R) Core(TM) i5-2520M CPU @ 2.50GHz
Intel(R) Core(TM) i5-2520M CPU @ 2.50GHz
PCI bus
High Definition Audio Controller
PCI Express standard Root Port
High Definition Audio Controller
Standard VGA Graphics Adapter
PCI Express standard Root Port
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
Base System Device
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
PCI standard PCI-to-PCI bridge
Actions
Device Manager
PCI standard PCI-to-PCI bridge Properties
General
Driver
Details
Resources
PCI standard PCI-to-PCI bridge
Property
Hardware Ids
Value
PCI\VEN_111D&DEV_806E&SUBSYS_00000000&REV_02
PCI\VEN_111D&DEV_806E&SUBSYS_00000000
PCI\VEN_111D&DEV_806E&REV_02
PCI\VEN_111D&DEV_806E
PCI\VEN_111D&DEV_806E&CC_060400
PCI\VEN_111D&DEV_806E&CC_0604
OK
Cancel

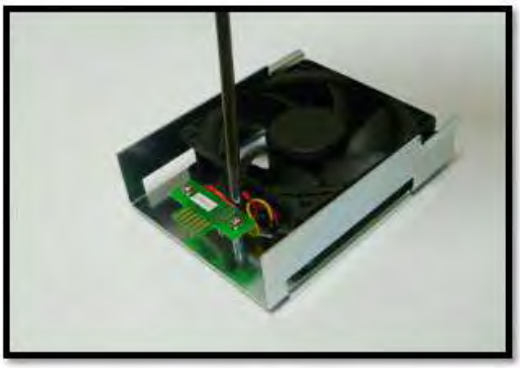
Chapter 7 Fan Upgrade

How to replace the fan

Remove Fan Housing. Remove Screws to dismount Fan the housing.

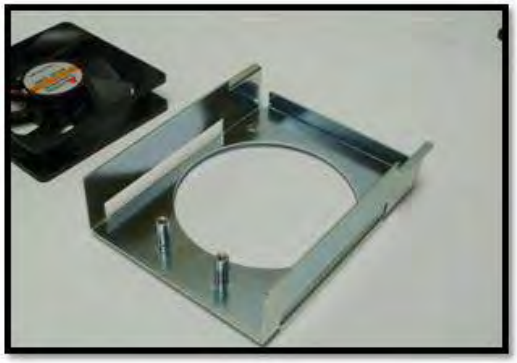


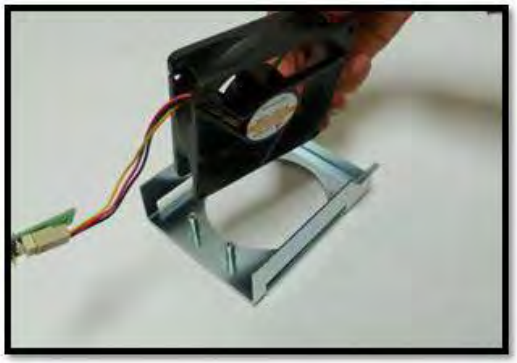
Remove Circuit Board from fan. Separate old Fan from Housing.

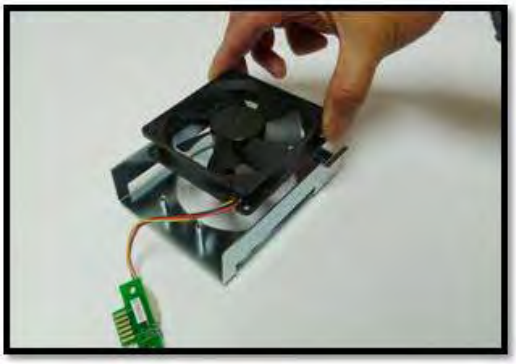


Prepare new fan. Connect Circuit Board to fan cable.

Prepare Fan Housing. Place Fan inside the Housing and then flip the fan; make sure the logo is facing down.

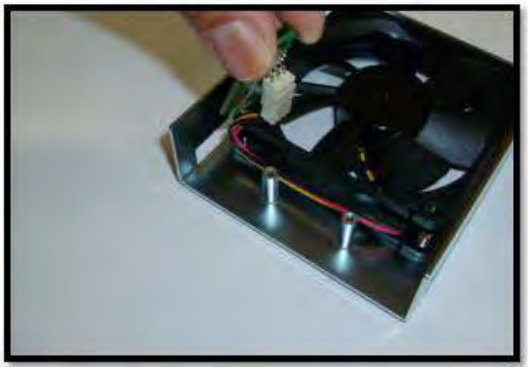


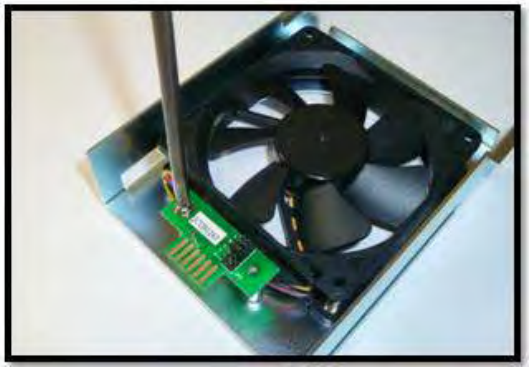




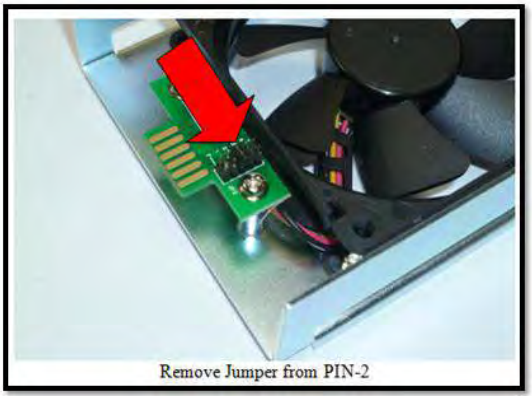
Align fan to mounting holes. Secure the Fan.

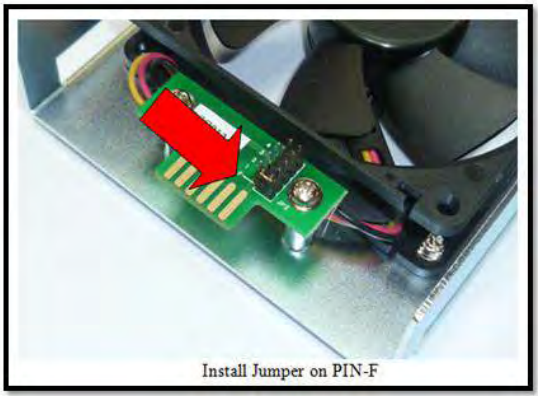
Mount the Circuit Board. Secure the Circuit Board.





Place the jumper to proper setting





Chapter 8 How to Get More Help

You can visit the Magma Technical Support FAQ pages on the Internet at: www.magma.com/support/

Contacting Technical Support

Our support department can be reached by fax at (858) 530-2733 or by phone at (858) 530-2511. Support is available Monday through Friday, 8:00 AM to 5:00 PM PT. When contacting MAGMA Technical Support make sure to include the following information:

1. Exact and correct Magma Serial #
2. Service Ticket or Case # (if you already submitted an online request)
3. Computer Type & Model: Operating System
4. Make & Model of PCI/PCIe cards: Application
5. Problem description

When submitting an online technical support request always provide a valid working e-mail address, phone number, shipping address and proper contact name. Check your e-mail for an automated response containing the case # and updates. You can also visit our web site at: www.magma.com/support. For a quick response, use the Technical Support and RMA Request Form available in the Support Section of the website. Simply complete the form with all required information. Please make sure that your problem description is sufficiently detailed to help us understand your problem.

Shipping or Transporting of Expansion Unit with PCI / PCIe cards

Any PCIe cards in **should be removed** (or not to be installed) prior to shipment to avoid or prevent possible damage. Note: Expansion board and PCIe / PCI cards that arrive damaged in shipment will not be covered under warranty.

Returning Merchandise to MAGMA

If factory service is required, a Service Representative will give you a Return Merchandise Authorization (RMA) number. Put this number and your return address on the shipping label when you return the item(s) for service. **Magma will return any product that is not accompanied by an RMA number.** Please note that Magma WILL NOT accept COD packages, so be sure to return the product freight and duties-paid.

Ship the well-packaged product to the address below:

Attention:RMA # _____, MAGMA
9918 Via Pasar
San Diego, CA 92126
USA

It is not required, though highly recommended, that you keep the packaging from the original shipment of your Magma product. However, if you return a product to Magma for warranty repair/ replacement or take advantage of the 30-day money back guarantee, you will need to package the product in a manner similar to the manner in which it was received from our plant. Magma cannot be responsible for any physical damage to the product or component pieces of the product (such as the host or expansion interfaces for the expansion chassis) that are damaged due to inadequate packing. Physical damage sustained in such a situation will be repaired at the owner's expense in accordance with Out of Warranty Procedures. Please, protect your investment, a bit more padding in a good box will go a long way to insuring the device is returned to use in the same condition you shipped it in. Please call for an RMA number first.

Appendix A Compliance

FCC

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE
The assembler of a personal computer system may be required to test the system and/or make necessary modifications if a system is found to cause harmful interferences or to be noncompliant with the appropriate standards for its intended use.

Industry Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cetappareilnumériqué de la classe A estconformé à la norme NMB-003 du Canada

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives. Magma will not retest or recertify systems or components that have been reconfigured by customers

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